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FINAL ENVIRONMENTAL ASSESSMENT

WEST POINT SCHOOL COMPLEX UPGRADE

UNITED STATES MILITARY ACADEMY
WEST POINT, ORANGE COUNTY, NEW YORK

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ABBREVIATIONS AND ACRONYMS

ADA	Americans with Disabilities Act
AR	Army Regulation
CCTV	Closed Circuit Television
CFR	Code of Federal Regulations
CMP	Coastal Management Program
DA	United States Department of the Army
dbA	A-weighted Decibels
DODEA	Department of Defense Education Activity
EA	Environmental Assessment
EFH	Essential Fish Habitat
ESA	Endangered Species Act
HFFMSD	Highland Falls/Fort Montgomery School District
HHSASS	Hudson Highlands Scenic Area of Statewide Significance
KACH	Keller Army Community Hospital
L_{dn}	day-night noise level
MOA	Memorandum of Agreement
mgd	million gallons per day
NEPA	National Environmental Policy Act
NHLD	National Historic Landmark District
NMFS	National Marine Fisheries Service
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NYSDEC	New York State Department of Environmental Conservation
NYSDOS	New York State Department of State
NYSECL	New York State Environmental Conservation Law
NYSOPRHP	New York State Office Parks, Recreation and Historic Preservation
OCDP	Orange County Planning Department
O&R	Orange and Rockland Utilities, Inc.
PIPC	Palisades Interstate Park Commission
PM-10	Particulate Emissions
REC	Record of Environmental Consideration
RFFAs	Reasonably Foreseeable Future Actions
RTE	Rare, Threatened, or Endangered
sf	Square Foot/Feet/Footage
SHPO	State Historic Preservation Office
SPDES	State Pollution Discharge Elimination System
USACE	United States Army Corps of Engineers
USDA SCS	United States Department of Agriculture, Soil Conservation Service
USDI	United States Department of the Interior
USEPA	United States Environmental Protection Agency
USFWS	United States Department of the Interior, Fish and Wildlife Service
USMA	United States Military Academy
WPES	West Point Elementary School
WPMS	West Point Middle School
WPSC	West Point School Complex

1.0 INTRODUCTION

1.1 BACKGROUND

The United States Military Academy (USMA) at West Point is a renowned and historic service academy that graduates and commissions over 900 officers each year. West Point is the United States Department of the Army's (DA's) oldest and most continuously occupied installation. The USMA at West Point offers a full range of academic, military, and athletic training and activities to almost 4,000 men and women cadets, as well as quality of life and community support services to USMA personnel.

The West Point School Complex (WPSC) serves as an educational facility for approximately 750 enrolled children of West Point military personnel residing on post (Ellingsen 2001). The WPSC is part of the New York and Virginia Domestic Dependents Elementary and Secondary School System, Department of Defense Education Activity (DODEA), which is a tenant command at the USMA. Operation, construction, maintenance, and repair of the WPSC are funded by the DODEA.

1.2 LOCATION AND DESCRIPTION OF FACILITIES

The USMA is comprised of an approximately 16,000-acre property located on the west shore of the Hudson River at West Point in Orange County, New York, and Constitution Island in Putnam County, New York (Figure 1). The WPSC is located, in the main cantonment of the USMA, approximately 500 feet north of Washington Road and approximately 1,000 feet east of the Keller Army Community Hospital (KACH) in the northern portion of the National Historic Landmark District (NHLD) (Figures 1 and 2). The West Point Elementary School (WPES) is currently housed in Building 705A, and the West Point Middle School (WPMS) is currently housed in Building 705 (Figure 2). A 50-car capacity parking lot lies between the two schools.

The existing campus is comprised of the current elementary and middle school buildings, a playground, soccer fields, outdoor asphalt basketball courts, two modular classroom buildings, an access road (Barry Road), a wooden walkway to the KACH, a nature trail, a storage shed, and a planned gymnasium. Although the gymnasium has not yet been built, a Military Construction

Figure 1. General Project Area Map, USMA, West Point, New York.

Figure 2. Existing WPSC Within the USMA, West Point, New York.

Project for the gymnasium is currently funded and construction activities were initiated in Fall 2002. The gymnasium was evaluated under a previous National Environmental Policy Act (NEPA) Environmental Assessment (EA) and associated Finding of No Significant Impact published on May 18, 2000. Therefore, the gymnasium is considered an existing building for the purposes of the WPSC Upgrade.

2.0 PROPOSED ACTION

2.1 PURPOSE AND NEED

The DODEA has determined that current facilities at the WPSC are inadequate when compared to DODEA Standards, particularly for WPES classroom space, parking, and vehicle and pedestrian access, flow, and safety. Table 1 presents a comparison of the square footage (sf) of existing WPES facilities with DODEA Standards. The space of existing pertinent facilities ranges between 5% and 31% deficient when compared to DODEA Standards.

Table 1.
Comparison of Square Footage of
Existing West Point Elementary School Facilities with DODEA Standards

Facility	Existing (sf)	DODEA Standards (sf)	Percent Deficient
General Purpose Classroom	900	950	5%
Pre Kindergarten/ Kindergarten Classroom	1000	1300	23%
Administrative Area	900	1300	31%
Art Classroom	1080	1500	28%

Source: Chaney 1999.

Department of Defense Directive 1342.21, dated October 13, 1992, mandates the USMA to provide education for dependents of military personnel residing at West Point. A classroom addition to the current WPES is needed to reduce the pupil to teacher ratio in grades one through three to 18:1, to comply with DODEA program requirements. The addition will also provide space to store materials and support teaching activities.

Parking also is deficient when compared to DODEA Standards. Current DODEA Standards require two parking spaces per teaching station, whereas the current parking area provides only 50 parking spaces for 45 teaching stations (Chaney 1999), and is therefore 44% deficient. An additional 30 unofficial parking spaces are used during special activities. Moreover, over one-

half of the existing parking spaces will be eliminated as a result of construction of the new gymnasium.

Current WPSC traffic is highly congested, because staff and teacher personal vehicles, and parents and buses dropping off students, all must use the central parking area. Pedestrian access is primarily located parallel and proximate to all vehicle traffic and therefore is considered unsafe for school children access and use.

In response to these needs and concerns, the DODEA developed a *Classroom Addition USMA, West Point, New York 10% Design Report* (Baker & Associates 2001). As a result of this study, the USMA has identified a need for five individual changes or improvements, hereafter referred to as elements, to the WPSC that include:

1) Construction of a 7,500 sf classroom addition to Building 705A;
2) Construction of a parking lot with 152 parking spaces;
3) Construction of a new bus staging area, including Americans with Disabilities Act (ADA) accessible parking spaces;
4) Demolition of Building 1000;
5) Two new and one modified sidewalk crossing on the south side of Barry Road; and,
6) Removal of the two temporary modular classrooms once the classroom addition is constructed and operational.

Specifically, the WPSC requires a bus drop-off/loading zone, efficient and safe traffic flow, adequate parking, and six additional classrooms at the WPES, as detailed in Sections 2.2.1 through 2.2.4 and depicted in Figure 3.

Figure 3. Proposed WPSC Upgrade Elements, USMA, West Point, New York.

2.2 DESCRIPTION OF PROPOSED ACTION

The proposed action consists of the addition of classroom space to Building 705A, the construction of a 152-space surface parking lot, new and modified sidewalk crossings on the east side of Barry Road, the creation of a bus staging area, the demolition of existing Building 1000, and the removal of two existing temporary modular classrooms located southeast of Building 705A, as described in more detail in the following subsections.

Construction of these facilities would require approximately 3 to 3 ½ months, and the majority of the heavy construction work would occur during the summer months when school is not in session (i.e., mid-June to mid-August). Specifically, the work requiring the largest quantities of heavy equipment and the noisiest activities would be performed during the summer break period, including construction of the foundation for the WPES building addition, the filling and grading activities for the parking lot.

2.2.1 Building 705A Classroom Addition

A classroom addition would be built on the north side of Building 705A (Figure 4) to meet classroom space requirements specified by current DODEA Standards. The proposed classroom addition would total 7,500 sf. The proposed addition's exterior architecture, massing, materials, slope roof design, and window openings would be compatible with the existing WPES. The proposed addition would contain six classrooms, approximately 900 sf each. Each classroom would include space for one teaching station and 18 students. Each classroom would include casework along entry walls of the rooms for material storage, coat storage, and counter space for educational activities. Each classroom would have a sink and a drinking fountain. In-class student restrooms and an accessible shower for special education may be added in the future, if needed. At least one classroom would be designed to support a physical rehabilitation educational program.

Classrooms would have carpeted flooring with vinyl composite tile in wet areas. Exterior and interior load-bearing walls would be constructed of concrete block with epoxy painted finish, and classroom dividers would be epoxy painted finish and drywall. Ceilings would be constructed of

Figure 4. East Elevation of West Point Elementary School (Building 705A), Facing Northwest, USMA, West Point, New York.

2-foot-square, lay-in tile, matching the existing tile, a maximum of 10 feet above the finished floor. Wall surfaces would be a combination of tack board and "white board" wet and dry marker boards. One wall surface in each room would function as a projection screen-viewing surface. Also, a ceiling mounted projection screen and a rack mounted television would be installed in each room.

Student restrooms, a faculty restroom, and a janitor's closet would be installed in the proposed addition. Each restroom would provide disabled-person access in accordance with the ADA. The restroom compartments would be plastic with hardware and accessories comparable to those in the existing building. All tile installations would use dark grout materials. A 500-sf storage room would be provided behind the existing stage area of the multi-purpose room.

The existing WPES building corridors would be extended to support the proposed additional classrooms. A secondary entrance would be added on the east corridor to connect the proposed addition to the drop-off and staging areas in front of the building. The entrance would also provide an ADA access to the wooded playground north of the building. A cross-corridor would connect to the main corridor, providing an internal circulation loop. Two additional exits would provide egress and additional access to play areas. Outdoor porches would be provided at each entry. There would be a 500-sf courtyard in the center of the proposed addition. Signage would be replaced throughout the existing building and installed in the proposed addition.

The proposed addition would be heated by hot water and cooled by refrigerated air conditioning. A fire suppression sprinkler system would be installed throughout the proposed addition. A new water line to the elementary school may be added to avoid future construction. A new circuit breaker would be installed in the existing switchboard, and a routing feeder would be installed up to the second floor. New speakers and call-in stations would be provided in each classroom for communication with the main office. The existing intercom system would be evaluated for an upgrade, if the project budget permits. The current clock system would be expanded to include the proposed addition and in-class telephone connections would be considered.

Local Area Network outlets would be installed for closed circuit television (CCTV) in a common raceway with the dedicated computer power outlets and computer cabling routed to the existing Local Area Network hub. All fire alarm devices would be connected to the existing fire alarm control panel located in the boiler room. The existing security system would be expanded to include the new exterior doors in the addition and occupancy sensors in the new corridor.

2.2.2 Parking Lot

The USMA proposes to construct 152 additional parking spaces in the wooded area located northeast of Building 1000, between the central school campus and Washington Road (Figure 5). The proposed parking lot would include two access ways from Barry Road, two-way access drives within the lot, 90-degree parking, and 9-foot-wide individual parking spaces. An intermediate crossover drive within the proposed parking lot would promote smooth traffic flow.

The parking lot would be constructed as a linear feature, decreasing in elevation from the west (Barry Road entrance) to the east, with an average slope of 5-6%. The parking lot would be crowned to provide stormwater runoff in three directions, to the north (Crow's Nest Brook), south (Sinclair Pond Brook), and east (confluence of the two brooks).

Approximately 5,000 cubic yards of fill would be necessary to establish the design grades. Approximately 250 three-axle dump trucks, carrying 20 cubic yards of fill per truck, would be necessary to deliver the required fill material to the site. The lot would be graded to provide for an "at-grade" edging, and some portions of the lot would require a 3- to 4-foot-tall retaining wall. A single construction crew would work on the parking lot at any one time, requiring a delivery frequency of five dump trucks per hour.

The proposed parking lot would be designed for personally owned vehicles and would not have a concrete curb and gutter perimeter, however, a concrete perimeter cap, flush with the pavement surface, would be installed. The perimeter cap would retain the pavement structures at the edges of the proposed parking lot and allow sheet drainage off the pavement. Removable concrete parking bumpers would be provided at the perimeter, but not in the middle, of the proposed parking lot. The flush perimeter cap and removable bumpers would facilitate snow removal.

Figure 5. Proposed Location for 152-Space Parking Lot, Facing Southeast, USMA, West Point, New York.

Vegetated/landscaped islands would be incorporated into the parking lot, and all parking spaces and access drives would be delineated by appropriate pavement markings. Pedestrian access from the proposed parking lot to the central campus would be provided via concrete sidewalks.

A small earthen berm (6- to 12-inches tall) would be added at the end of the parking lot to slow stormwater runoff to the adjacent waterbodies, Crow's Nest Brook and Sinclair Pond Brook. In addition to the vegetated berm, vegetation would also be retained throughout the periphery of the lot to provide filtration of stormwater runoff.

USMA would require the contractor to prepare, submit for review and approval, and implement an Erosion Control Plan during project construction to minimize potential soil erosion and sedimentation of adjacent waterbodies. The Erosion Control Plan would ensure compliance with the New York State Department of Environmental Conservation's (NYSDEC's) proposed stormwater management regulations for construction activities pursuant to the State Pollution Discharge Elimination System (SPDES), scheduled to go into effect on March 10, 2003. In addition, the USMA will perform long-term monitoring of stormwater runoff from the new parking lot, and will evaluate the adjacent streams for water quality and erosion and sedimentation for a three-year period following completion of construction. In the event that the monitoring reveals that the stormwater is having an undue adverse effect on the adjacent streams or the stability of the slopes leading to the streams, USMA will develop and implement appropriate corrective actions to resolve the issue.

The site of the proposed parking lot would be approximately 20 feet lower than the main WPSC, making handicap access from the proposed parking lot impractical. Therefore, all handicap parking would be in the center of the bus drive loop between the school buildings. Signage at the entrance to the proposed parking lot would be provided to direct handicap traffic to the parking spaces within the proposed bus drive.

The existing sidewalk on the east side of Barry Road would be modified in two places to accommodate the two entrances to the proposed parking lot. The existing sidewalk cut to access

the area south of Building 705 would be improved to allow easier vehicle access and safer pedestrian access to that area.

2.2.3 Bus Staging Area

The proposed bus drive would be located around the approximate perimeter of the existing paved parking lot between the WPES and WPMS buildings (Figure 6). Existing paving in the middle of the bus drive loop would be removed, backfilled with topsoil, and seeded or sodded for a turf staging area. Concrete sidewalks would be installed adjacent to the outside of the bus drive for student staging and assembly, and access to buses. The bus drive would include concrete curb and gutter drainage. The bus drive would be paved and designed for frequent and long-term bus loading/unloading service. Six disabled-person accessible parking spaces, including one van-accessible space, would be provided inside the north end of the bus drive loop.

2.2.4 Building 1000 Demolition

Constructed in 1940 as family housing, Building 1000, which is individually eligible for the National Register of Historic Places (NRHP) and a contributing element to the NHLD, is no longer needed for housing or business administration purposes and would be demolished accordingly by the USMA to accommodate the proposed parking lot (Halin 2002c). A Memorandum of Agreement (MOA) between the USMA and the New York State Office of Parks, Recreation and Historic Preservation (NYOPRHP), State Historic Preservation Office (SHPO) and a Historic American Buildings Survey are currently being completed.

2.2.5 Temporary Modular Classroom Removal

The classroom addition (Section 2.2.1) would eliminate the need for the two temporary modular classrooms currently located southeast of Building 705A at the WPSC (see Figures 2 and 3). Therefore, the two temporary modular classrooms would be removed following completion of the proposed addition.

Figure 6. Existing Parking Lot Located Between the West Point Elementary School (Building 705A) and Middle School (Building 705), Facing North, USMA, West Point, New York.

2.3 ALTERNATIVES

2.3.1 No-Action Alternative

In accordance with regulations promulgated by the Council on Environmental Quality, 43 Code of Federal Regulations (CFR) Part 1500, Section 1502.14(d), a No-Action Alternative must be considered. The No-Action Alternative would involve using and maintaining the current facilities available at the USMA. This alternative would avoid both minor temporary and permanent impacts to the school services resulting from construction, as described in Section 4.0 (Environmental Consequences). However, this alternative would not ensure compliance with current DODEA regulations or address the current inadequacies of the WPSC. Accordingly, the USMA has determined that this alternative would not be viable.

2.3.2 Site Alternatives

2.3.2.1 Parking Lot

Site alternatives for the proposed parking lot were developed by identifying potential, relatively level areas of open space in close proximity to the WPSC large enough to accommodate the parking spaces required by DODEA standards. Based upon assessment of existing open space, terrain constraints, potential visual and cultural resources impacts, and budget constraints, three site alternatives for the proposed parking lot were considered.

<u>KACH Parking Garage</u>

The first alternative involved construction of a parking garage at the KACH, to the north of Building 705A, to accommodate parking associated with the WPSC and the KACH. This location would provide an adequate number of parking spaces to meet DODEA standards. The location also would provide suitable parking in close proximity to the WPSC, as well as pedestrian access from the KACH to the WPSC via an existing wooden staircase. However, limited space is available to construct parking at the KACH due the adjacent steep topography and existing KACH buildings. Space constraints would require the parking area to be constructed as a multi-tiered parking garage, rather than an open, ground-level parking lot. As a

result of the need to construct a more expensive parking garage at this site, this alternative was determined not to be a viable option due to project budgetary constraints.

Dual-Parking Lot

The second alternative considered was the construction of two separate parking lots, one at the proposed site located on the east side of Barry Road (see Single Parking Lot below), and one at an additional site located on the west side of Barry Road. The dual-parking area alternative would provide an adequate number of parking spaces to meet DODEA standards. The locations also would provide suitable parking in close proximity to the WPSC, as well as pedestrian access to the WPSC along existing (east side) or new (west side) sidewalks on either side of Barry Road.

The parking lot design east of Barry Road would provide fewer parking spaces and be smaller in size compared to the proposed design, but also would reduce potential impacts associated with the proposed design.

However, the parking area west of Barry Road would require the demolition of Building 372. Building 372 was originally constructed on another site in 1892 as the Enlisted Men's Quarters, and moved to its current location west of Barry Road in 1935. Although Building 372 is not currently listed on the NRHP, it is considered a contributing element to the NHLD. Moreover, its intentional relocation is considered "a defining element of the NHLD" that may be "integral to the mid-1930s physical arrangement" of this area of the USMA at West Point (Nolte et al. 2001).

Additionally, due to open space constraints, the parking area west of Barry Road would need to directly abut Bailey Loop and the adjacent Band Housing Area (Building 421). Construction in this location would require the elimination of all open green space and shade trees located between Barry Road and Bailey Loop to accommodate the required parking spaces. The severe space constraints at this site would prevent the ability to plant any substantive landscaping as a visual barrier between the parking lot and the Band Housing Area. The elimination of open

green space and shade trees, inability to plant a visual buffer, and the permanent operation of an asphalt parking lot immediately adjacent to the Band Housing Area would result in an unacceptable, permanent visual and incompatible land use impact on this residential community. This alternative would also alter the residential feel/characteristics of this section of the USMA.

Therefore, this alternative was rejected because of unacceptable cultural resource impacts that would result to the NHLD from demolition of Building 372, and intrusive visual and incompatible land use impacts that would result to the Band Housing Area from Building 372 demolition, open space and shade tree elimination, and permanent parking lot operation.

Single Parking Lot

The third alternative involved construction of a single 152-space asphalt parking lot in a wooded area located on the east side of Barry Road. This alternative also would provide an adequate number of parking spaces to meet DODEA standards. The location also would provide suitable parking in close proximity to the WPSC, as well as pedestrian access to the WPSC along the existing sidewalk located on the east side of Barry Road.

Construction of the parking lot ingress/egress lanes on the west side of Barry Road would require the demolition of Building 1000. Building 1000 was constructed in 1940 as Family Housing. Building 1000 is individually eligible for the NRHP and considered a contributing element to the NHLD, but currently is not considered a defining or integral element of the NHLD. In addition, the USMA has determined that Building 1000 is no longer needed for housing or business administrative purposes. There would be adverse cultural resource impacts associated with the NHLD as a result of demolition of Building 1000, however, they would be mitigated below the significant level with the execution and implementation of the MOA between the USMA and SHPO, to include its documentation, and a Historic American Buildings Survey.

The parking lot would be located immediately adjacent to two waterbodies, Crow's Nest Brook and Sinclair Pond Brook. As a result, temporary construction activities (e.g., grade, fill, restoration) and long-term stormwater runoff have the potential to result in significant impacts to

water quality and aquatic life in both waterbodies, and native trout populations in Crow's Nest Brook. However, these potential impacts would be reduced to a less than significant level through the implementation of UMSA's best management practices. These practices include implementation of a site-specific Erosion Control Plan, compliance with NYSDEC SPDES permit requirements for stormwater management associated with construction activities, placement of an earthen berm at the end of the parking lot to partially retain and slow stormwater sheet runoff, and retaining native waterbody bank vegetation and revegetating exposed and fill soils to facilitate filtering of runoff prior to entering the streams.

This site provides the most contiguous open space of the three alternatives considered. This site also minimizes cultural resource, visual, and land use impacts to the WPSC and surrounding residential communities. The demolition of Building 1000 currently is not determined to be a significant impact on the NHLD. Available open space at the site allows the planting of appropriate landscaping to provide a visual buffer and minimize potential impacts to the visual landscape as viewed from both the historic Washington Road corridor to the south, and the Lee Housing Quarters to the south and east, of the proposed site. The perceived visual buffer and actual physical vegetation, topographic, and spatial buffers between the parking lot and Lee Housing Quarters would minimize land use impacts associated with the conversion of a wooded open space to an asphalt parking lot. Therefore, the single-lot alternative was selected as the most viable parking area alternative.

2.3.2.2 Other Project Elements

No site alternatives were considered for the other project elements because of constraints posed by the existing buildings and topography. The building addition to Building 705A could only be accommodated adjacent to the existing building where other existing structures and level terrain would allow, and the new bus drive/staging area would use already existing disturbed space in the project area.

2.3.3 Design Alternatives

2.3.3.1 Parking Lot

Two design alternatives were considered for the proposed parking lot location on the west side of Barry Road, an initial design and a refined design.

Initial Design

This first alternative represents the initial design based on limited site reconnaissance and consideration of impacted resources. This design involved construction of an approximately 160-space paved parking lot with little to no implementation of best management practices or design elements. This alternative would have required a greater volume of fill to produce a completely level parking lot. Assuming use of standard 3:1 fill slopes, the parking lot footprint would have required partial filling of both Crow's Nest Brook and Sinclair Pond Brook, resulting in unacceptable impacts on water quality, aquatic life, and fisheries. Additionally, this design would have required complete elimination of vegetation and shade trees on the parcel, with the exception of retaining some riparian vegetation along Crow's Nest Brook and Sinclair Pond Brook. However, the visual impact on the NHLD and the Washington Road scenic corridor, as well as visual and land use impacts on residents of the Lee Housing Quarters, would have been significant. Therefore, this alternative was not selected because it did not adequately address potential significant impacts on water quality, visual resources, and land use.

Refined Design

The second design alternative involved a refinement of the initial design that incorporated site reconnaissance, consideration of potentially impacted resources, and incorporation of best management practices and design elements. This design alternative is described as the proposed parking lot in Section 2.2.2. This alternative would include a reduced footprint to accommodate 152 parking spaces, and a sloped parking surface, resulting in a significant reduction in required fill material that would not require any disturbance or filling of adjacent waterbodies or riparian areas. Best management practices and design elements incorporated into this alternative include an Erosion Control Plan, compliance with NYSDEC SPDES requirements, an earthen berm and revegetation to slow and filter stormwater sheet flow to adjacent waterbodies, retaining all

riparian vegetation along adjacent waterbodies, and retaining several patches of shade trees and vegetation in the central portion of the parking lot as a visual barrier. Accordingly, this alternative was selected because it would adequately avoid, minimize, or mitigate potential significant impacts on water resources, aquatic life, fisheries, vegetation, visual resources, and land use.

2.3.3.2 Other Project Elements

Alternative design elements were not considered for the other project elements associated with this project. The building addition, sidewalk cuts, and bus drive/staging area were required to conform in design to the existing WPSC.

2.4 PERMITS AND APPROVALS

Any proposed action funded, authorized, or carried out by a federal agency must comply with NEPA. The Proposed Action would be carried out by a Federal Entity, the DA, and must comply with the DA's implementing regulations for NEPA, Army Regulation (AR) 200-2, Environmental Effects of Army Actions. Specifically, AR 200-2, Chapter 5-3, Paragraph b, specifies that an EA is required for construction of new facilities. Accordingly, this EA fulfills the NEPA requirements for the Proposed Action.

The USMA will coordinate with the NYOPRHP, SHPO and the Advisory Council on Historic Preservation to finalize a project-specific MOA to ensure compliance with Section 106 of the National Historic Preservation Act (NHPA).

The project is located within a state-designated coastal zone and the West Point Military Academy Subunit of the Hudson Highlands Scenic Area of Statewide Significance (HHSASS), administered by the New York State Department of State (NYSDOS), Coastal Management Program (CMP). Pursuant to 15 CFR Part 930.34(b), the USMA must notify the NYSDOS CMP of project conformance with State Coastal Policies at least 90 days prior to project implementation. Accordingly, the USMA coordinated with the NYSDOS CMP during a site visit of the Proposed Action conducted on March 28, 2002. Due to the remote location of the project at the USMA at West Point and limited visibility from the Hudson River, the NYSDOS

determined that the Proposed Action would have no impact on State Coastal Policies or the HHSASS and that a letter of concurrence would not be required (Bjornsen 2002).

3.0 AFFECTED ENVIRONMENT

This section describes the existing natural and social environmental resources in, and around, the WPSC.

3.1 GEOLOGY

The USMA is located in eastern Orange County, New York, in the New England Upland Section of the New England Physiographic Province (United States Department of the Interior [USDI], Geological Survey 1995). The landscape consists of steep, rocky hillsides typically created through the physical and chemical alteration of metamorphic rocks. Bedrock in this area primarily consists of Precambrian metamorphic rock (gneiss, quartzite, marble, and anorthositic rocks) and some igneous rock formed during the Middle Proterozoic (Helikan) period (more than 570 million years ago) of the Paleozoic era and Phanerozoic eon (New York State Museum, Geologic Survey 1986). The bedrock is exposed in several areas and there are many large boulders exposed on the ground surface around the WPSC.

3.2 SOILS

The WPSC is located on two soil types, including manmade fill consisting of smoothed Udorthents (UH), and naturally-occurring sloping Hollis (HLC) soils. Udorthents soil is defined as a nearly level to sloping manmade cut and fill area, with moderate to excessive drainage (U.S. Department of Agriculture, Soil Conservation Service [USDA SCS] 1981). This soil is poorly suited to farming or recreation uses, and is typically present at industrial sites, urban developments, or other construction sites (USDA SCS 1981). Sloping Hollis soil is derived from glacial deposits of schist, gneiss, and granite and found at areas of peaked elevation. This soil type is well drained and has a low water capacity (USDA SCS 1981). This soil is poorly suited to urban and recreational uses due to shallowness over bedrock and associated dryness (USDA SCS 1981). There are no Agricultural Districts, hydric soils, state-designated Unique Farmlands, or additional Farmlands of Statewide Importance located at the proposed project site (Cabrera 1997).

3.3 WATER RESOURCES

3.3.1 Groundwater Resources

No federally-designated Sole Source Aquifers exist near the WPSC (U.S. Environmental Protection Agency [USEPA] 1996). Additionally, no state-designated Primary or Principal Aquifers exist in the vicinity of the WPSC (Stegville 1999). The closest such aquifer, the Fishkill and Sprout Creeks Area, is located approximately 5.2 miles northeast of the WPSC on the eastern side of the Hudson River (Bugliosi and Trudell 1988). The only productive alluvial aquifers at the USMA are associated with the Hudson River or Popolopen Brook (Bjornsen 2001b).

3.3.2 Surface Water Resources

Crow's Nest Brook and its tributary, Sinclair Pond Brook, flow through the southern portion of the WPSC. These perennial surface waters originate from several small tributaries draining Crow's Nest Mountain, and form the Crow's Nest Watershed that drains the northeastern portion of USMA property into the Hudson River. The NYSDEC Waters Index Number of Crow's Nest Brook and Sinclair Pond Brook is H84, and the stream Class is C. Class C streams are designated as having a level of water quality that is suitable for primary and secondary contact recreation, and fish propagation and survival (NYSDEC 1996a). Under the USMA's good stewardship directive, Crow's Nest Brook should be treated as Class C(t) because of the presence of trout (Beemer 2002a). Additionally, a seep/spring is located in the wooded lot located at the southeast end of the WPSC.

The banks of Crow's Nest Brook and Sinclair Pond Brook exhibit evidence of erosion over time due to periodic storm flood events. Both Crow's Nest Brook and Sinclair Pond Brook drop an elevation of 43 feet in 600 linear feet between the entrance to the WPSC and the confluence of the two streams. They are both actively down-cutting and side-cutting their banks. A site visit on December 5, 2002, identified five erosion sites along the two brooks (Cubbison 2002a).

3.3.3 Public and Private Water Supply Sources

No public or private water supply wells are located within a 2-mile radius of the WPSC (Stegville 1999). The WPSC water supply is provided via a water main pipeline that originates

from the USMA Lusk Reservoir Water Treatment Plant. The USMA Lusk Reservoir Water Treatment Plant has the capacity to provide up to 4 million gallons per day (mgd) of potable water through a water supply pipeline distribution system throughout the USMA Support Zone. In addition, USMA has a license agreement with the Palisades Interstate Park Commission (PIPC) to provide potable water to West Point during periods of high demand (October 16 through May 31 each year). The agreement states that West Point will be provided with whatever quantity of water is needed (USMA 1998a).

3.4 FISHERIES

3.4.1 Common Fisheries

As Class C streams, Crow's Nest Brook and Sinclair Pond Brook are suitable for fishing, fish survival, and fish propagation (NYSDEC 1996a). Fish sampled in Crow's Nest Brook include American eel (*Anguilla rostrata*), brown trout (*Salmo trutta*), rainbow trout (*Oncorhynchus mykiss*), eastern blacknose dace (*Rhinichthys atratulus*), and creek chub (*Semotilus atromaculatus*) (Beemer 2001). Crayfish (*Cambarus bartonii*) are also present. Eastern blacknose dace and creek chub are also present in Sinclair Pond Brook.

3.4.2 Essential Fish Habitat

Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act, the Secretary of the U.S. Department of Commerce has approved Essential Fish Habitat (EFH) for a variety of commercially harvested species that have federal Fishery Management Plans. Specifically, the West Point reach of the Hudson River, located in the vicinity of the Proposed Action, lies within the river's estuary mixing zone. This reach of the Hudson River potentially provides habitat for a range of life stages of fish that currently have Fishery Management Plans within the Mid-Atlantic Unit, including red hake (*Urophycis chuss*), winter flounder (*Pseudopleuronectes americanus*), windowpane (*Scopthalmus aquosus*), Atlantic sea herring (*Clupea harengus*), bluefish (*Pomatomus saltatrix*), Atlantic butterfish (*Peprilus triacanthus*), summer flounder (*Paralicthys dentatus*), and black sea bass (*Centropristus striata*) (Kurkul 2000). However, the bluefish is the only species that has been documented in this reach of the Hudson River by the NYSDEC (Beemer 2002c). The National Marine Fisheries Service (NMFS) reported that no

EFH under their jurisdiction would be affected under the condition that construction activities are conducted using properly installed and maintained sediment controls (Kurkul 2000).

3.5 VEGETATION

The WPSC consists primarily of maintained lawn areas, asphalt parking areas, and basketball courts. A mature Appalachian Oak-Hickory Forest characteristic of the Hudson Highlands region borders the north side of the approved gymnasium construction site. Dominant species include northern red oak (*Quercus rubra* var. *borealis*), black oak (*Q. velutina*), and red maple (*Acer rubrum*) (USMA 1998a).

A forested site on the south side of Crow's Nest Brook is dominated by an overstory of red oak (*Q. rubra*), white oak (*Q. alba*), and black cherry (*Prunus serotina*), and an understory of red raspberry (*Rubus idaeus)* and black raspberry (*Rubus occidentalis*). All mature trees range in size from 10 to 24 inches diameter at breast height and 40 to 60 feet in height. This area provides a dense deciduous canopy and a natural buffer between the Lee Housing Quarters and the WPSC.

No unique vegetative communities or plant species (*i.e.*, federal- or state-listed endangered, threatened, rare, or special concern) are known to occur on or in close proximity to the site (Ketcham 1999). Because maintained lawn and asphalt parking areas dominate the project site, the likelihood of any special status plant species existing in the proposed project area is very low.

3.6 WETLANDS, FLOODPLAINS, AND NAVIGABLE WATERWAYS

3.6.1 Wetlands

Based on a review of National Wetland Inventory maps (USDI Fish and Wildlife Service [USFWS] 1990) and New York State Freshwater Wetlands Maps (NYSDEC 1987), no state- or federally-mapped freshwater or tidal wetlands are located within the WPSC. Natural resource managers from the USMA performed a formal federal-jurisdictional wetland determination of the project area in June 2002, and determined that no federal-jurisdictional wetlands exist on the project site. Executive Order 11990, Protection of Wetlands, states that the USMA would first

avoid impacts to existing wetlands, then minimize impacts to existing wetlands, and lastly mitigate for any wetland loss during construction of any new project.

3.6.2 Floodplains

The WPSC lies in Zone X, delineated as areas outside of the 500-year flood plain of the Hudson River (Federal Emergency Management Agency 1987).

3.6.3 Navigable Waterways

No navigable waterways are located at, or immediately adjacent to, the WPSC. The closest navigable waterway is the Hudson River, located 2,000 feet east of the WPSC.

3.7 WILDLIFE

The USMA Integrated Natural Resource Management Plan contains a documented species list of all wildlife observed on USMA grounds (USMA 1998a). Existing habitat in the immediate vicinity of the project area is limited to maintained lawn adjacent to the WPSC, a small parcel of Appalachian Oak-Hickory Forest located adjacent to the north of the site of the approved gymnasium, and an open wooded area south of Crow's Nest Brook. Common species that primarily utilize these areas include the blue jay (*Cyanocitta cristata*), scarlet tanager (*Piranga olivacea*), gray squirrel (*Sciurus carolinensis*), raccoon (*Procyon lotor*), eastern chipmunk (*Tamias striatus*), northern watersnake (*Nerodia sipedon*), and redback salamander (*Plethodon cinereus*).

According to NYSDEC, Region 3, Division of Fish, Wildlife, and Marine Resources, no New York State wildlife refuges or management areas occur in the vicinity of the WPSC (Ketcham 1999).

3.8 ENDANGERED AND THREATENED SPECIES

3.8.1 Endangered and Threatened Species

Four federally-listed and 24 state-listed endangered and threatened animal species have been documented on USMA property (USMA 1998a). Pursuant to AR 200-3 and the Endangered Species Act (ESA) of 1973, the Biological Survey Unit of the New York State Museum conducted a survey of threatened and endangered fauna and flora on the USMA. The survey

concluded that no federally-listed species were permanent residents of, or breed on, the USMA. The timber rattlesnake (*Crotalus horridus*) is the only state-listed threatened species to be a permanent resident of USMA (Stechert 1997, USMA 1998a).

Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) is a federal- and state-listed threatened species that is known to use Constitution Island, located approximately 1 mile east of the proposed project site, as a feeding area (Krahling 2002). Constitution Island also serves as an important bald eagle day-use area during winter months, from December through March (McGowan et al. 1996). To ensure compliance with applicable endangered species regulations, the USMA has coordinated with the NYSDEC and USFWS to develop a programmatic *Endangered Species Management Plan for the Bald Eagle on the Lands of the United States Military Academy* (Beemer 2002d). The programmatic management plan requires that the USMA consult informally and formally with USFWS pursuant to Section 7 of the ESA, and the NYSDEC pursuant to the New York State Environmental Conservation Law (NYSECL), regarding any USMA construction activity that may disrupt bald eagle activity at USMA.

USMA's consultant, Northern Ecological Associates, Inc. (NEA), initiated correspondence with the USFWS, NYSDEC, and NYSDEC Natural Heritage Program (NHP) describing the proposed project and requesting information on known threatened or endangered species that might be adversely affected by the project. The response from the NYSDEC NHP confirmed the presence of bald eagles at Constitution Island (Krahling 2002). The response from the USFWS determined that the project is not likely to adversely affect the bald eagle and that no Biological Assessment or further Section 7 consultation pursuant to the ESA is required (Clough 2002) (see Appendix B). No response was received from the NYSDEC.

Shortnose Sturgeon

The shortnose sturgeon (*Acipenser brevirostrum*) is a federal- and state-listed endangered species. To ensure compliance with applicable endangered species regulations, the USMA has

coordinated with the NMFS and the NYSDEC to develop a programmatic *Endangered Species Management Plan for the Shortnose Sturgeon* (Beemer 1997b). The programmatic management plan requires that the USMA consult informally and formally with NMFS pursuant to Section 7 of the ESA, and the NYSDEC pursuant to the NYSECL, regarding any USMA activities in the Hudson River. The project would not impact the Hudson River, therefore consultation with NMFS was not required.

Timber Rattlesnake

Little was known about the timber rattlesnake population on the USMA at West Point prior to 1994. At that time, a three-year radiotelemetry study was initiated to investigate their population size, seasonal ranges, and habitat use, as summarized by Stechert (1997). The study identified three populations utilizing the USMA property and associated with three historic den sites that are located on the USMA. Additionally, timber rattlesnakes from a den located on Harriman State Park were found on USMA property (Stechert 1997).

In areas that were intensely studied, six significant habitat areas were identified including three high use areas and three moderate use areas in the vicinity of two of the three dens. The three high use areas included the two den sites and associated gestating and basking areas, and the three moderate use areas included primarily foraging habitat. Habitat characteristics of den areas, basking/gestating areas, forested foraging habitat, and wetland foraging habitat were identified and described in detail in the study report (Stechert 1997).

Seasonal movements within 1.3 miles from den sites were recorded (Stechert 1997). One of the dens located during the study is approximately 0.2 mile from the WPSC project area. The population utilizing this den is composed of less than 100 snakes and was described by Stechert (1997) as a healthy population. Because individuals from this den were not monitored using radiotelemetry, significant habitat use areas were not identified by Stechert (1997). The other two dens and associated significant habitat areas are located approximately 6.0 miles from the WPSC and their populations were described as depleted (Stechert 1997). The Harriman State Park den is located over 5.0 miles from the WPSC.

The Appalachian Oak-Hickory Forest located to the immediate north of the WPSC, near the approved gymnasium, includes deciduous forest with leaf litter, little herbaceous cover, and large boulders with some exposed bedrock, and therefore provides potential forested foraging habitat and transient habitat for the timber rattlesnake. In support of this, timber rattlesnakes have been documented to pass through the WPSC project area (Beemer 2001). Although the den site is within 0.2 mile of the WPSC project area, the WPSC is unlikely to support basking/gestating areas which are often characterized by open clearings with exfoliating rock surfaces (Stechert 1997).

Snail Species

During an August 2001 mollusk and crayfish survey of Crow's Nest Brook, a potentially unknown snail species was found (Prezant and Chapman 2002). In follow-up surveys in 2002, no additional individuals were found. However, given the one specimen's small size (length = 2 millimeters), there is the possibility that additional specimens went undetected (Beemer 2002c). If more of these species are found and it is confirmed as a new species, then it would qualify for emergency listing under the ESA. However, there is currently no formal regulatory protection for any potential population of this unidentified snail species in Crow's Nest Brook.

Plant Species

An inventory of rare plants on USMA at West Point was conducted during 1993 and 1994 (Barbour 1996). The survey concluded that 63 special status plant species are present at USMA at West Point. Of these, 33 have special status in New York State, including 13 listed as state-endangered, 14 listed as state-threatened, and six listed as state-rare (USMA 1998a). None of the 63 special status plant species are known to occur on or near the WPSC.

3.8.2 Designated Critical Habitat

No habitat within the project area is considered "critical habitat" pursuant to the ESA according to the USFWS (Stilwell 1999) and the NYSDEC (Ketcham 1999).

3.9 LAND USE AND ZONING

3.9.1 Land Use and Local Zoning

The WPSC lies in the Community Support Zone of the USMA (Figure 7). Land uses in the Community Support Zone includes academic, administrative, limited military field training, recreation, installation support, and residential. Current land use at the WPSC is primarily designated for academic, athletic, and recreational activities. The existing adjacent land uses are also consistent with uses identified in the *USMA Master Plan for the Year 2007* (USMA 1998b). Specifically, the KACH, Band Housing Quarters, and Lee Housing Quarters adjoin the WPSC.

These facilities all function to assist post military personnel and their family members, military personnel in the area not assigned to the USMA, and the retired military population of the surrounding region.

3.9.2 Recent, Ongoing, and Planned Developments

This section contains details of all recent developments in the vicinity of the WPSC. All ongoing and planned developments are detailed in Section 5.0, Reasonably Forseeable Future Actions. All development within the Community Support Zone should be compatible with uses outlined in the *USMA Master Plan for the Year 2007* (USMA 1998b).

3.9.2.1 Demolition of Buildings 709 and 759

Buildings 709 and 759, located west of the WPSC, have been demolished.

3.9.2.2 Temporary Helicopter Landing Zone

A temporary Medical Evacuation Helicopter Landing Zone was established at the terminus of Worth Place by painting a standard helicopter landing designation at the approximate center of the parking area. Military or commercial Medical Evacuation helicopters would utilize this Landing Zone to provide medical emergency evacuation of patients requiring critical care to designated medical facilities. An EA was filed for this project on September 10, 2001.

Figure 7. Land Use and Local Zoning Designations at the USMA, West Point, New York.

3.9.2.3 Post Chapel Parking Lot

The USMA constructed a new parking lot to serve the Post Chapel in the summer of 2002. Building 799 was constructed in 1944 to serve as the West Point Post Chapel. This building is a contributing element to the NHLD. Before construction, the parking lot location was an open, vacant lot with no structures. The new parking lot is 120 feet in length from east to west, 70 feet in width from north to south, and provides parking for 18 automobiles (Cubbison 2002a).

3.9.2.4 WPSC Nature Trail

A nature trail was constructed to the west of the existing WPSC, with three study sites connected by wooden walkways. Site 1 would allow students to investigate the stream passing through the property, Site 2 is an outdoor classroom area, and Site 3 is adjacent to a wetland.

3.9.2.5 WPSC Storage Shed

A 12-foot by 14-foot wooden utility shed was installed behind Building 705A for the storage of equipment and supplies. The base foundation is crushed rock and the shed is placed directly on top of the rock foundation. The storage shed is a prefabricated, gabled wooden structure and does not require utilities. A Record of Environmental Consideration (REC) was prepared for this project on September 18, 2002.

3.9.2.6 WPSC Playground

An approximately 0.07-acre elementary school playground was recently constructed immediately north of the WPES. The playground consists of a six-station swing set, two basket devices, a balance beam, a hanging bar, two adult benches, two children's play benches, two "Tic-Tack-Toe" stations, a climbing apparatus, and a large playground set. The playground has a natural bark playing surface, is not lighted, and is connected to the WPES via an ADA accessible ramp and a stairway.

3.9.3 Generation and Disposal of Waste Material

Academic, military, and athletic activities at the USMA at West Point generate ordinary, non-hazardous solid waste in the amount of approximately 26 tons per day. Current land use activities in the immediate vicinity of the WPSC include educational, athletic, and recreational (playground) activities. These activities contribute to this generation of solid waste at the

USMA. In accordance with USMA Management Plan, the USMA maintains trash receptacles at the WPSC, and routinely collects and disposes generated solid waste. Current activities at the USMA also generate approximately 1.8 to 1.9 mgd of wastewater and sewage, which is treated at the Target Hill Wastewater Treatment Facility on the Hudson River.

3.9.4 Recreational and Other Designated Facilities

The WPSC is located within the West Point Military Academy Subunit of the HHSASS (see Sections 3.10 and 3.19) and within a NHLD (see Sections 3.10 and 3.11). No federal, state, or local designated recreation areas or parks (New York State Department of Transportation 1992), National Natural Landmarks (USDI National Park Service 1994), or Lands of Statewide Importance (NYSDEC and NYSOPRHP 1995) are located at the WPSC.

3.10 VISUAL RESOURCES

The USMA at West Point is located within an area that has been classified as visually significant in a number of different ways. Portions of the USMA at West Point are located within the NHLD, USMA at West Point, Orange County, New York; numerous buildings at the USMA at West Point have been nominated individually for the NRHP or have been identified as contributing elements to the NHLD; and the USMA is located within the HHSASS. The various visual resources associated with the USMA at West Point have been identified for their contributions to landscapes of historical, architectural, and natural significance.

The WPSC is located in the northern central portion of the USMA NHLD, which contains a number of visual resources that have some historical and architectural significance. The project includes such visual resources as the school buildings and the existing elements of the immediate school property, including the ingress/egress, the existing parking lot, school grounds, and landscaping. The project affects such visual resources as "the buildings immediately adjacent to the school property, as well as properties and landscaping within the immediate viewshed" of the project (Nolte et al. 2001:1).

The WPES (Building 705A) is not individually eligible for the NRHP, although it has "traditionally been considered a contributing element to the NHLD" at the USMA at West Point (Nolte et al. 2001:7). The school was constructed in 1962, and is considered to be a "good

example of a mostly intact early 1960s school building" (Nolte et al. 2001:7). Although the construction date indicates that "the school was built during the Cold War era (1946-1989), it does not have any Cold War significance" (Nolte et al. 2001:7).

The surrounding school property consists of various elements such as the adjacent WPMS, two temporary modular classrooms, the existing school parking area, ingress/egress roads, and playground and sports fields.

The adjacent WPMS is also not individually eligible for the NRHP (Nolte et al. 2001:4), although it also has "traditionally been considered a contributing element to the NHLD" at the USMA at West Point (Nolte et al. 2001:7). The original architectural design for the school, prepared in 1929, called for a school built with a "reserved Colonial Revival style," similar to the Colonial Revival style that "can be found in the housing area immediately south of the school complex" (Nolte et al. 2001:4). However, when the WPMS was constructed five years later, the resulting structure was built in the Academic Revival style, which "conforms to the dominant style found on residential as well as other administrative and educational buildings constructed during the 1930's" at the USMA at West Point (Nolte et al. 2001:4). The first addition to the WPMS was constructed in 1955, with "similar stylistic detailing that is consistent with the earlier building" (Nolte et al. 2001:7). A second addition was constructed in 1987, although this second addition "is less sympathetic to the style of the main school building" (Nolte et al. 2001:7).

The WPSC is located within a densely to more open park-like wooded area of deciduous trees. In particular, this existing wooded environs in the vicinity of the WPSC has been described as "a rustic transitional space between the school and the surrounding housing," which serves as a visual barrier between the school and the surrounding housing and Washington Road, as well as "an integral part of the landscape represented in the northern part" of the USMA at West Point (Nolte et al. 2001:14).

In addition to the various visual resources associated with the school building and its associated property, and with the proposed parking area, the surrounding environs for the project contain a number of visual resources, including the buildings and properties along Bailey Loop,

Washington Road, Barry Road, and Lee Road, and the viewsheds from these buildings, properties, and thoroughfares. Buildings adjacent to the WPMS facility along Bailey Loop and Lee Road include residential housing complexes. The current viewsheds of those buildings along Bailey Loop are dominated by the WPES, although the viewsheds of several housing units along Bailey Loop also include the WPMS facility. The existing viewsheds for this residential area are already dominated by school facilities, and the associated uses of these facilities that would have a visual impact, such as bus traffic, and outdoor learning and recreational use by students, staff, and the community.

The buildings along Lee Road are collectively known as the Lee Housing Quarters. The Lee Housing Quarters is believed to have been designed by Edwin V. Dunstan, and was constructed primarily in the 1930s during Dunstan's term as the Construction Quartermaster and architect at the USMA at West Point (Nolte et al. 2001:2). The Lee Housing Quarters is located at a greater distance from the WPMS facility, and the viewsheds for this residential area are dominated by a natural landscape composed of a park-like wooded area of deciduous trees, as well as water courses of Crow's Nest Brook and Sinclair Pond Brook. It is also believed that Dunstan may have deliberately incorporated this natural landscape into the Lee Housing Quarters design so that "the area's landscaping retains the woodland appearance that was established in the Cadet areas [of the USMA at West Point] by the Olmsted Brothers" (Nolte et al. 2001:4). As it currently exists, the WPMS facility is a very small component of this natural landscape, and is screened by the dense woods, and primarily visible in the winter, when the leaves have fallen.

Barry Road is the primary access route for the WPSC, although two buildings are located along Barry Road. These two buildings are Building 372 and Building 1000, and both buildings are "currently considered a contributing element to the NHLD" at the USMA at West Point (Nolte et al. 2001:13).

Similar to the housing on Bailey Loop, the viewsheds from both of these buildings include the WPSC. Thus the existing viewsheds for these two buildings are already dominated by school facilities, and the associated uses of these facilities that would have a visual impact, such as bus traffic, and outdoor learning and recreational use by students, staff, and the community.

Building 372 was constructed on another site in 1892 as the Enlisted Men's Quarters, and was moved to its current location on Barry Road in 1935, "during a period of large-scale construction and reordering of the north end of the installation" (Nolte et al. 2001:13). It is possible that "the reasons for its removal [from its original location] and relocation [to its current location] … may be integral to the mid-1930s physical arrangement" of this area of the USMA at West Point, and thus "a defining element of the NHLD" at the USMA at West Point (Nolte et al. 2001:13).

Building 1000 was constructed in its current location on Barry Road in 1940 as Family Housing (Nolte et al. 2001:12). The *USMA Integrated Cultural Resources Management Plan* has identified Building 1000 as a contributing element to the USMA NHLD, and has determined that Building 1000 is individually eligible for the NRHP (Halin 2002c).

As noted above, Washington Road is one of the main thoroughfares through the USMA at West Point, serving a physical link between the various components of the northern part of the USMA at West Point. In addition to the physical link, Washington Road also serves as a visual corridor that "weaves through and conforms to the hilly terrain of the northern section of the USMA at West Point" (Nolte et al. 2001:18), providing numerous opportunities to view the various natural and manmade resources of the USMA at West Point. The existing WPSC is barely visible from the approaches to the intersection of Washington Road with Barry Road, and is screened by vegetation, existing structures, and the narrow width of Barry Road at the intersection itself.

In addition to the visual resources comprising historical and architectural structures, the project is also located within an area of visual resources that are associated with the natural environment surrounding the USMA at West Point. This area of natural visual resources is the West Point Military Academy Subunit of the HHSASS, which is a designated coastal zone as determined by the NYSDOS CMP (Taylor 1998). Pursuant to 15 CFR Part 930.33(a), the USMA is required to make a determination regarding the effects, if any, of implementation of a project on the land and water uses and natural resources of New York's coastal zone. Pursuant to 15 CFR part 930.34(b), if the USMA determines that implementation of a project will have no effect on the land and water uses and natural resources of New York's coastal zone, the USMA is required to notify the NYSDOS at least 90 days before final project approval (Barr 2000).

3.11 CULTURAL RESOURCES

The WPMS (Building 705) is considered a contributing element to the NHLD at the USMA at West Point, but is not considered individually eligible for the NRHP (Nolte et al. 2001). The WPES (Building 705A) was built in 1962 and is not considered a contributing element to the NHLD at the USMA at West Point and also is not individually eligible for the NRHP.

USMA undertook a review and impact assessment of the various WPSC plans in 2001. The purpose of the review and impact assessment was to determine the potential impacts of these plans to existing cultural resources within the NHLD. The results of this review and impact assessment were presented in the document, *Review and Impact Assessment of the Master Plan for the West Point Elementary and Middle Schools, United States Military Academy at West Point, Orange County, New York* (Nolte et al. 2001).

The project has the potential to impact cultural resources within the NHLD visually, architecturally, and archaeologically. Visually, final design plans for proposed changes to structures, landscaping, and ingress/egress paths associated with the school campus will have to be evaluated in order to assess aesthetic impacts to both the campus, as well as the larger NHLD. Architecturally, final design plans for changes to structures on the school campus will have to be evaluated to ensure the continued incorporation of architectural cues from both the school campus, as well as the larger NHLD. Archaeologically, the school campus is located in an area with moderate to high sensitivity. Final design plans that include previously undisturbed portions of the campus and the surrounding area will have to be investigated to determine the presence of previously unidentified cultural resources (Nolte et al. 2001).

3.12 SOCIOECONOMICS

3.12.1 Population

The Town of Highlands, including USMA at West Point, covers over 30 square miles. The population of the Town of Highlands (and Orange County) increased slowly, but consistently, during the first 50 years of the century. Construction of the New York Thruway, however, marked the transition of the area from one of intense agricultural activity to one of urban development, which led to a county-wide population explosion during the last 50 years. The

1970s brought high interest rates, high unemployment rates, and a construction stand-still leading to a decrease in population from the projected higher growth rates. The Town of Highlands recession led to a population decrease of 6.78 percent between 1970 and 1990 (Orange County Planning Department [OCPD] 1990). The population in the year 2000 was 12,484 (Ulrich 2002). As of May 2001, the USMA maintained a population of 12,251 military and civilian residents, including over 4,000 cadets (Bjornsen 2001a).

3.12.2 Economy and Employment

The USMA is the major employer and the Highland Falls/Fort Montgomery School District (HFFMSD) is the second largest employer of full-time personnel in the region. The dominant industries in the Town of Highlands are retail trade, education, and public administration (OCPD 1990). The HFFMSD employs 147 people, 100 of which are teachers (HFFMSD 2002). The DODEA and USMA currently employ 145 people, 86 of which reside at the USMA. There are 84 full-time, 29 intermittent, and 32 part-time employees at the WPSC (Colacicco 2002).

The USMA routinely hires local and regional contractors to perform construction and rehabilitation activities for numerous projects at the USMA. In the year 2000, there were 4,794 construction jobs in Orange County (New York State Department of Labor 2002).

3.12.3 Community Services

The USMA at West Point provides quality of life and community services for those who reside on post or are employed by USMA. These services include housing, childcare facilities, chapel, recreational facilities, community club, fire department, and security services. Children of military members that reside on post are eligible to attend the WPES and WPMS. The USMA at West Point also provides athletic and physical recreational opportunities for cadets, such as football, baseball, track and field, gymnastics, soccer, volleyball, tennis, swimming, cycling, golf, hockey, basketball, lacrosse, wrestling, boxing, rugby, crew, and sailing. Many of these services also are available to the surrounding community and general public.

3.12.4 Tax Revenues

Because the USMA is federally owned, no federal, state, or local property tax revenue is directly generated by this installation. Civilian and military personnel employed at, or visiting, the

USMA contribute to state sales tax revenue on goods and services purchased in the Town of Highlands and adjacent municipalities. DODEA pays an impact aid fee to Orange County, in lieu of property taxes, for each child residing on the USMA who attends ninth through twelfth grade at Highland Falls/Fort Montgomery High School (Murawski 2002).

3.12.5 Transportation and Traffic Circulation

The USMA at West Point is accessible from U.S. Route 9W and New York State Routes 218 and 293 (see Figure 1). These roads are currently used to access USMA for academic services, sporting events, and miscellaneous activities. Employees of USMA, both permanent staff and contractors, routinely enter the USMA property via access roadways and park in existing parking lots. Shuttle bus service currently runs along main roadways through the USMA at West Point installation. Students enrolled at the WPSC are shuttled to and from school via a DODEA-contracted bus service. Passenger rail service to West Point was terminated in the late 1950s, when the west shore (Hudson River) line was converted to freight only. Public transportation, in the form of the Short Line Bus Company, regularly services the West Point community. The WPSC is accessed by Barry Road, which is part of the internal USMA paved road system. There is an emergency access route connecting Lee Housing Quarters to the southeast corner of the WPSC.

3.13 AIR QUALITY

The USMA at West Point, including the WPSC, is located in the Hudson Valley Air Quality Control Region. Southern Orange County is currently classified as an attainment area for all National Ambient Air Quality Standards criteria pollutants (carbon monoxide, nitrogen dioxide, particulate matter, lead, and sulfur dioxide), except ozone (NYSDEC 1996b, 1996c). Southern Orange County is classified as a severe non-attainment area for ozone (NYSDEC 1996c). The WPSC is not under common control of the USMA in relation to air emissions from other parts of the post (Alongi 2001).

3.14 NOISE

Noise is generally defined as unwanted sound. The day-night noise level (L_{dn}) is the most widely used descriptor of community noise levels. The unit of measure of the L_{dn} is the A-weighted decibel (dBA), which closely approximates the frequency responses of human hearing.

The primary source of noise in the area of the WPSC is vehicular traffic on Washington Road, located just south of the WPSC. This road is one of two primary and continuous roadways that traverse the USMA. This road supports traffic 24 hours per day, and generates a level of noise typical for an urban area. Noise level measurements have not been obtained in the project area. In lieu of field measurements, the noise levels at the WPSC can be approximated using given land uses. The USEPA (1974) document "Protective Noise Levels" lists typical day-night levels for various outdoor locations. Mean outdoor day-night sound levels characteristic of the WPSC range from 60 to 80 dBA (USEPA 1974).

3.15 UTILITY INFRASTRUCTURE

3.15.1 Energy

Electricity at the USMA at West Point is provided by Orange and Rockland Utilities, Inc. (O&R) (USMA 1998a). O&R substations transmit electricity through overhead lines, and electricity is transformed to an adequate voltage for use at the WPSC at the existing transformer located in the center of the school parking lot. Current annual electrical usage at West Point is 66,262,310 kilowatt hours.

Heat at USMA is provided by three fuel oil boilers and three steam-turbine-driven generators housed in Building 604. Another separate gas/oil fired steam plant consisting of two 40,000-pound-per-hour water tube boilers is located in Building 845. This facility serves the Washington Gate, KACH, and the WPSC. This facility currently averages under 50% capacity. Total annual consumption of fuel oil between these two plants is 5 million gallons per year (Alongi 2001).

3.15.2 Telecommunications

Telecommunication services at USMA and the WPSC include telephone, fire alarm, security, and cable television services. Contractors provide administrative telephone service, but all infrastructure is owned by the DA (USMA 2001). Fiber optic cables connect many of the Main Post buildings and provide telephone, fire alarm, and security services. Cable television is provided through three services operated by a local cable company.

3.16 HAZARDOUS MATERIALS

No USEPA-designated hazardous waste sites are located at the USMA (USEPA 1999). Additionally, no NYSDEC-designated active or inactive hazardous waste sites or contaminated water or soil resources are located at the USMA (NYSDEC 2000). Various chemicals typically found in school laboratories are used in WPSC laboratories. These chemicals are stored and handled in accordance with the DODEA Health and Safety Plan. Household cleaning agents and related chemical materials are securely stored and handled according to the DODEA Health and Safety Plan.

The current recreational field to the north of the WPMS is located on a closed solid waste landfill, that is capped with clean fill. Any hazardous material spills that occur on USMA at West Point are reported, contained, and remediated in accordance with the *USMA Installation Spill Contingency Plan* (USMA 1996).

3.17 PUBLIC HEALTH AND SAFETY

Various public health and safety hazards occur at the WPSC. These may include natural hazards such as bee stings and tick-borne Lyme Disease, as well as typical elementary and middle school student physical injuries and accidents. The WPSC maintains all required internal safety and security measures in compliance with DODEA standards. Medically Related Services Facilities include a developmental pediatrician, a child psychiatrist, a child psychologist, a community health nurse, and a health care administrator.

Additionally, the USMA operates and maintains complete public health, emergency response, and security services that serve the WPSC and the greater USMA community. Services include a hospital, emergency medical response teams, helicopter medical evacuation service, fire department, and military police.

The USMA maintains and operates the KACH, located less than 0.25 mile directly northwest of the WPSC on Washington Road. This is a 65-bed facility that houses a surgical unit, an obstetric unit, an intensive-care unit, a helipad, and numerous outpatient clinics. The hospital-operated Acute Care Clinic oversees an ambulance service for those who need immediate transport. Because the KACH is located in close proximity to the WPSC, emergency response personnel typically respond to an emergency within 5 minutes of notification.

In the event injured WPSC students or staff requires emergency medical evacuation to another facility, USMA operates and maintains a trained medical evacuation unit and associated emergency helicopter landing zone at the terminus of Worth Place, less than 0.5 mile northwest of the WPSC. The landing zone supports intermittent operations of two flights per month or approximately two hours of operation per month.

The USMA maintains and operates a fire station located in Building 721. The WPSC maintains a system of fire alarm pull stations throughout the installation that communicate directly with the fire station. Because Building 721 is located less than 0.5 mile south of the WPSC on Washington Road, fire response personnel typically respond to an emergency at the WPSC within 5 minutes of alarm. Additionally, DODEA standards require, and the WPSC conducts, periodic fire drills. The WPSC also maintains required emergency exits, exit signs, and emergency lighting in case of power outages to ensure safe evacuation of WPSC students and staff in the event of a fire.

The Provost Marshal's Office provides 24-hour military police support that includes patrols and general security. The USMA military police maintain discipline and enforce laws and regulations, as well as provide physical and personal security and support for crime prevention. The USMA military police conduct routine patrols of the WPSC grounds.

3.18 ENVIRONMENTAL JUSTICE

There are currently 1,033 active duty military personnel at West Point, including 829 Whites, 124 Blacks, 50 Hispanics, 3 Native Americans, 16 Asian/Pacific Islanders, and 11 personnel of other descent (USMA 2001).

Only military housing exists within the USMA community. Low-income housing is scattered throughout the Village of Highland Falls. A low-income community, Weyant Green, is located adjacent to the USMA's South Post, off West Point Highway on Webb Lane, approximately 3 miles from the WPSC. Weyant Green contains six buildings with a total of 51 housing units built in 1983 with funding from the U.S. Department of Housing and Urban Development. Quaker Hill Housing currently owns Weyant Green.

3.19 COASTAL ZONE MANAGEMENT

The USMA at West Point lies within a state-designated coastal management zone managed by the NYSDOS CMP. Specifically, the WPSC is located within the West Point Military Academy Subunit of the HHSASS.

4.0 ENVIRONMENTAL CONSEQUENCES

This section identifies the impacts or consequences to the natural and social environment that may result from implementing the WPSC Upgrade.

4.1 GEOLOGY

Implementation of the elements of the Proposed Action would involve excavation of surficial fill material only, and would not impact geological formations, with one exception. The excavation of surficial soil and subsurface bedrock and placement of shallow spread footings for the WPES classroom addition foundation would use the subsurface geological formation as structural support for the building foundation. This geological formation has no specific economic (i.e., mineral resource) or other structural value. As a result, implementation of the Proposed Action would have no significant adverse impact on geological resources.

4.2 SOILS

Implementation of the elements of the Proposed Action would result in earth moving, excavation, fill, and grading activities in construction work areas, as well as construction equipment movement and material storage. Excavated soil would be temporarily sidecast and stored adjacent to construction work areas. Additionally, approximately 5,000 cubic yards of off-site fill material would be needed to grade the proposed parking lot to a relatively level average slope of 5-6%, permanently raising topography of the 1.41-acre parking lot site. The USMA would obtain and use only clean fill materials from an existing commercial borrow pit, and transport these materials in accordance with applicable regulations.

Best management practices for erosion and sedimentation control outlined in an Erosion Control Plan will be implemented to mitigate the potential for soil erosion during land clearing, foundation excavation, fill, grading, and restoration activities. Specifically, the USMA would require the contractor to prepare, submit for review and approval, and implement a site-specific Erosion Control Plan. The Erosion Control Plan would ensure compliance with NYSDEC's proposed stormwater management regulations for construction activities pursuant to the SPDES, scheduled to go into affect on March 10, 2003. Additionally, any exposed soils and fill would be

permanently revegetated as soon as practicable following completion of construction. As a result, no significant adverse impacts would result from soil erosion or sedimentation.

4.3 WATER RESOURCES

4.3.1 Groundwater Resources

Because no public water supply wells or sole source, primary, principal, or important aquifers occur at, or near, the WPSC, there would be no impact on groundwater resources through implementation of the WPSC Upgrade.

4.3.2 Surface Water Resources

The only surface water resources located within the WPSC project area are Crow's Nest Brook and its associated tributary, Sinclair Pond Brook, located adjacent to and on either side of the proposed parking lot. No fill or excavation would take place below the ordinary mean high water mark of these waterbodies. During implementation of the Proposed Action, the identification, control, and any accidental spill containment of any hazardous construction materials would be performed in accordance with the *United States Military Academy Installation Spill Contingency Plan* (USMA 1996). Best management practices for erosion and sedimentation control would be implemented during construction to minimize any potential soil erosion and subsequent sedimentation of adjacent waterbodies. Accordingly, project construction activities would not result in significant sedimentation, turbidity, or hazardous waste runoff into Crow's Nest Brook or Sinclair Pond Brook.

Long-term surface water quality of Crow's Nest Brook and Sinclair Pond Brook has the potential to be adversely impacted by stormwater runoff from the proposed parking lot. The parking lot design incorporates vegetated/landscaped islands within portions of the lot, which has reduced the total new impervious area by approximately 0.06 acre. In addition, the parking lot would be used only for personally owned vehicle parking associated with school-related activities, and not for bus or fleet car use, permanent or overnight parking, or vehicle maintenance activities. Accordingly, only low-volume, incidental leaks of automobile oil, lubricants, windshield washer fluid, and antifreeze/coolant would be expected. To minimize migration of such hazardous materials with stormwater sheet flow to the adjacent waterbodies, USMA will construct a 6- to

12-inch-tall, vegetated, earthern berm along the outside edge of the parking lot. Additionally, USMA will not disturb waterbody beds, banks, or riparian vegetation, and will revegetate any exposed soils or fill. The berm will partially retain hazardous materials and slow stormwater sheet flow, and vegetation would partially filter out hazardous materials prior to stormwater sheet flow reaching adjacent waterbodies. In addition to the berm, vegetation would also be retained throughout the periphery of the proposed parking lot to provide filtration of stormwater runoff. Implementation of these best management practices and refined design measures would minimize potential water quality impacts associated with long-term stormwater sheet flow from the proposed parking lot into Crow's Nest Brook and Sinclair Pond Brook.

To prevent potential undermining of the banks adjacent to the proposed parking lot, leading to potential collapse and damage, the USMA will undertake measures to stabilize the banks of Crow's Nest Brook and Sinclair Pond Brook. Specifically, the USMA will preclude construction work from occurring on the banks of the stream adjacent to Washington Road and to the east (downstream) of the parking lot. Construction barriers would be established to prevent vegetation disturbance and maintain vegetation already existing on the stream banks in this area. Stabilization activities will occur at the five erosion sites identified on Crow's Nest Brook and Sinclair Pond Brook, where the ground has been previously eroded and vegetation is minimal. Stabilization activities will be permitted to occur up to the streambed of Crow's Nest Brook on the north side of the proposed parking lot, and west up to Barry Road, for the purpose of improving streambed and bank stabilization.

USMA will require the construction contractor to prepare, submit for review and approval, and implement during bank stabilization activities, a site-specific Erosion Control Plan. This plan will comply with the NYSDEC SPDES requirements, and thereby would minimize potential erosion and sedimentation into surface waters.

During its review of the Draft EA for this project, the USEPA commented that this Final EA should clarify whether the stormwater runoff from the parking lot would be routed to a pre-treatment or storm sewer system, and noted the importance of ensuring that there are adequate stormwater controls to protect the waterbodies in the vicinity of the project (see Appendix F).

Although the space constraints near the parking lot prevent the incorporation of a specialized stormwater pre-treatment or storm sewer system in this area, the USMA believes that the measures proposed will minimize adverse effects to adjacent surface waters from stormwater runoff. To verify that the planned measures are adequate, USMA will perform long-term monitoring of stormwater runoff from the new parking lot, and will evaluate the adjacent streams for water quality and erosion and sedimentation for a three-year period following completion of construction. In the event that the monitoring reveals that the stormwater is having an undue adverse effect on the adjacent streams or the stability of the slopes leading to the streams, USMA will develop and implement appropriate corrective actions to resolve the issue.

4.3.3 Public and Private Water Supply Sources

The existing 3-inch-diameter domestic water line may be extended as part of the WPSC Upgrade to serve the future proposed fire sprinkler system in the existing WPES. The water demand incurred by implementation of the Proposed Action would be accommodated by existing water supplies available from the USMA Lusk Reservoir Water Treatment Plant and the PIPC.

4.3.4 Impacts Due to Disturbance of Contaminated Sediments

Implementation of the Proposed Action to construct the WPES addition, parking lot, new bus staging area, and sidewalk crossings, and the demolition of Building 1000, would require earth moving activities, including excavation, importation and placement of borrow fill material, grading of exposed soils, equipment movement and storage, and site restoration. Borrow material would be obtained from a commercial borrow pit and consist of clean fill, and therefore would not result in importation of contaminated sediments. Because no known hazardous material spill sites or contaminated sediments occur in the project area, proposed earth moving activities would not result in disturbance of contaminated soils or sediments. As a result, implementation of the elements of the Proposed Action would not increase risks to human health or the environment due to disturbance of contaminated sediments.

4.4 FISHERIES

4.4.1 Common Fisheries

Construction of the Proposed Action likely would not directly degrade water quality or aquatic habitat because no fill or construction activities would occur directly in, or below the ordinary mean high water mark of, any nearby waterbodies (i.e., Crow's Nest Brook or Sinclair Pond Brook), with the exception of the proposed bank stabilization measures identified in Section 4.3.2. Implementation of the Proposed Action also would not involve construction or placement of in-stream structures, impoundments, dams, or other structures that would directly alter the ambient temperature, rate or pattern of water flow, or water depths of Crow's Nest Brook or Sinclair Pond Brook. Therefore, implementation of the Proposed Action would not directly impact fisheries or their habitat.

Construction of the elements of the Proposed Action, including the proposed parking lot adjacent to waterbodies, likely would not degrade water quality because construction would comply with best management practices for stormwater management and erosion and sedimentation control as specified in a site-specific Erosion Control Plan. In addition, implementation of the Proposed Action likely would not significantly increase water temperature because no removal of waterbody bed, bank, or riparian vegetation, or shade trees on stream banks, is proposed. Additionally, four patches of mature shade trees would be retained within the parking lot footprint to help minimize potential thermal inputs associated with stormwater sheet flow.

However, construction of the 152-space parking lot adjacent to these waterbodies would create a new, approximately 1.41-acre impervious surface. As a result, these waterbodies would receive an increased local volume of stormwater sheet flow from the parking lot site during storm events. Potential erosion and sedimentation associated with this increased stormwater sheet flow would be minimized by construction of a 6- to 12-inch-tall earthen berm along the outside edge of the parking lot pavement, and retention of natural vegetation around the periphery of the lot. Additionally, the earthen berm and any exposed soil or fill would be permanently revegetated as soon as possible following completion of construction. All waterbody bed, bank, and riparian vegetation also would be retained. The berm and vegetation would act to reduce the rate and

interrupt the force of stormwater flow, and thereby minimize potential soil erosion and subsequent waterbody sedimentation.

During its review of the Draft EA for this project, the USEPA commented that this Final EA should clarify whether the stormwater runoff from the parking lot would be routed to a pre-treatment or storm sewer system, and noted the importance of ensuring that there are adequate stormwater controls to protect the waterbodies in the vicinity of the project (see Appendix F). Although the space constraints near the parking lot prevent the incorporation of a specialized stormwater pre-treatment system in this area, the USMA believes that the measures proposed will minimize adverse effects to adjacent surface waters, and the associated fishery resources, from stormwater runoff. To verify that the planned measures are adequate, USMA will perform long-term monitoring of stormwater runoff from the new parking lot, and will evaluate the adjacent streams for water quality and erosion and sedimentation for a three-year period following completion of construction. In the event that the monitoring reveals that the stormwater is having an undue adverse effect on the adjacent streams, fishery habitat, or the stability of the slopes leading to the streams, USMA will develop and implement appropriate corrective actions to resolve the issue.

As a result, implementation of the Proposed Action and proposed best management practices, design measures, and monitoring likely would not result in significant indirect impairment to the viability of fisheries habitat.

4.4.2 Essential Fish Habitat

According to NMFS (Kurkul 2000), because construction activities at the site would be conducted using properly installed and maintained sediment controls, no EFH under their jurisdiction would be affected. As a result, implementation of the Proposed Action would have no impact on EFH.

4.5 VEGETATION

No vegetation communities or plant species of federal or state concern, or significance, occur at or near the WPSC. Implementation of the proposed 152-space parking lot would require the permanent removal of approximately 1.41-acres of mature, park-like forest. To minimize the

forested area permanenty affected, USMA redesigned the parking lot to retain all waterbody bed, bank, and riparian vegetation, as well as four patches of vegetation and mature trees in the central portion of the lot. Due to the minimal amount of plant diversity associated with this regionally-common vegetation community, implementation of the Proposed Action would have a permanent, but minor impact on vegetation.

4.6 WETLANDS, FLOODPLAINS, AND NAVIGABLE WATERWAYS

4.6.1 Wetlands

The WPSC does not contain any federal- or state-designated, or other identified, freshwater or tidal wetlands. Accordingly, implementation of the Proposed Action would not involve any dredge or fill activities in wetlands and, as a result, would have no direct impact on federal or state jurisdictional wetlands. Therefore, NYSDEC Article 24 Freshwater Wetlands, NYSDEC Article 25 Tidal Wetlands, or U. S. Army Corps of Engineers (USACE) Section 404 (Clean Water Act) permits are not required for the proposed WPSC Upgrade.

4.6.2 Floodplains

Implementation of the Proposed Action would be constructed outside the 500-year flood plain of the Hudson River, in a location that currently contains other aboveground structures and two paved local roads (Washington Road and Barry Road). Therefore, implementation of the Proposed Action would have no undue adverse impacts on floodplains.

4.6.3 Navigable Waterways

There are no navigable waterways located within the proposed project site. The closest navigable waterway is the Hudson River, located 2,000 feet due east of the project site. As a result, implementation of the Proposed Action would have no significant impact on navigable waterways.

4.7 WILDLIFE

Implementation of the Proposed Action could have minor short-term and long-term impacts on terrestrial wildlife populations occurring in the area. During construction, the clearing and grading of work areas would result in the loss of some vegetative cover used by amphibians, reptiles, small mammals, and birds. These construction activities could result in the temporary

and permanent disturbance of habitat and possible mortality of individuals of less mobile, burrowing, and/or denning species of amphibians, reptiles, and mammals. The return of ground dwelling species would be prohibited at the WPES addition and parking lot sites due to the placement of permanent foundations and asphalt. The return of ground dwelling species would be reduced in temporary construction areas due to the high level of soil compaction that would result from construction and construction equipment traveling over terrestrial habitat. Construction activities may also cause the temporary and permanent displacement of more mobile species due to increased human activity and habitat alterations. Following construction, wildlife species are expected to resume their normal habits consistent with post-construction habitat availability in and within the vicinity of the project area.

Implementation of the Proposed Action would result in a permanent loss of wildlife habitat located within the proposed parking lot site. Approximately 1.41 acres of relatively open, park-like, deciduous forest would be permanently converted to asphalt parking lot, which represents the largest impact on wildlife habitat in the project area. However, other suitable foraging, nesting, and resting sites of similar habitat exist immediately adjacent to the proposed project area. Other impacts would be primarily to maintained lawn and currently developed areas that support limited wildlife diversity. As a result, implementation of the elements of the Proposed Action would result in permanent, but minor impacts on wildlife and associated habitat resources.

4.8 ENDANGERED AND THREATENED SPECIES

4.8.1 Endangered and Threatened Species

Bald Eagle

In accordance with relevant provisions identified in the programmatic *Endangered Species Management Plan for the Bald Eagle on the Lands of the United States Military Academy* (Beemer 2002d), the USMA has consulted with the USFWS regarding the potential impacts of project implementation on the bald eagle. Consultation with the USFWS has resulted in their determination that the project is not likely to adversely affect the bald eagle and that no

Biological Assessment or further Section 7 consultation pursuant to the ESA is required (Clough 2002). Furthermore the USFWS has indicated that no other federally-listed or proposed endangered or threatened species under their jurisdiction are known to exist in the project impact area. In addition, no habitat in the project impact area is currently designated or proposed "critical habitat" in accordance with the provisions of the ESA (Clough 2002).

Based on the USMA's bald eagle monitoring program, which USMA has implemented since 1996 in accordance with its *Endangered Species Management Plan for the Bald Eagle on the Lands of the United States Military Academy* (as well as informally documented sightings since 1990), the USMA determined that only occasional transient bald eagles would be expected to utilize the project impact area, and their presence would occur from December through March only. Therefore, implementation of the Proposed Action would likely have no significant adverse effect on the bald eagle.

Shortnose Sturgeon

The programmatic management plan for the shortnose sturgeon requires that the USMA consult informally and formally with NMFS pursuant to Section 7 of the ESA, and the NYSDEC pursuant to the NYSECL, regarding any USMA activities in the Hudson River. Because the project would not impact the Hudson River, consultation with NMFS and NYSDEC was not required.

Timber Rattlesnake

Potential timber rattlesnake den or basking/gestation habitat has not been identified as occurring within the WPSC project area. However, due to the location of a known den site approximately 0.2 mile from the project area, potential summer foraging or transient habitat has been identified as occurring within the Appalachian Oak-Hickory Forest located adjacent to and to the north of the Proposed Action. Construction of the proposed facilities would result in no direct impacts to this habitat, however transient timber rattlesnakes may be impacted if they attempt to traverse active construction areas.

According to Section 11-0535 of the NYSECL, the taking, importation, transportation, possession or sale of endangered or threatened species of wildlife is prohibited, except under license or permit from the NYSDEC. To mitigate potential impacts to the timber rattlesnake during construction of the proposed facilities, USMA would monitor the impacted areas for timber rattlesnake activity when construction is scheduled between April and September. In the event of a timber rattlesnake encounter, USMA has a verbal agreement with the NYSDEC to move timber rattlesnakes to a suitable, off-site rookery, den, or foraging habitat (Beemer 2002b). This verbal agreement identifies Jim Beemer, Natural Resource Biologist, USMA, as the person that would be notified in case of an encounter and the person that would handle and translocate individual timber rattlesnakes. USMA has agreed to develop written standard operating procedures for timber rattlesnake encounters during construction of the Proposed Action.

Snail Species

Because there is currently no formal regulatory protection for any potential population of the unidentified snail species found in Crow's Nest Brook, and potential water quality impacts would be minimized by the implementation of best management practices associated with a site-specific Erosion Control Plan, no significant adverse impacts to this species are anticipated. Nonetheless, USMA would continue to monitor additional mollusk and crayfish survey efforts at Crow's Nest Brook where a potentially unknown snail species was found (Prezant and Chapman 2002). If more individuals of this unknown species are found and the Smithsonian Institute, to which a specimen was submitted, determines that it is a new species, then consultation with the USFWS would be initiated for direction on protection strategies for work adjacent to Crow's Nest Brook.

Plant Species

None of the 63 plants that have special status in New York State are known to occur on or near the WPSC.

In summary, implementation of the Proposed Action and proposed best management practices and design measures likely would not jeopardize the continued existence of any of Federally-listed or state-listed endangered or threatened species.

4.8.2 Designated Critical Habitat

According to the USFWS (Stilwell 1999) and NYSDEC Natural Heritage Program (Ketcham 1999), the WPSC is not located in a designated critical habitat area. As a result, implementation of the Proposed Action would have no impact on designated critical habitat.

4.9 LAND USE AND ZONING

4.9.1 Land Use and Local Zoning

Construction and operation of the proposed elements of the WPSC Upgrade would result in placement of a total of 2.33 acres of permanent fill on various land types. This includes 0.68 acres of clean fill and asphalt on existing asphalt for the bus drive/staging area, 0.24 acres of building foundation on maintained lawn for the WPES addition, and 1.41 acres of clean fill and asphalt on deciduous forest and the current Building 1000 site for the 152-space parking lot.

The 0.92 acres of fill on existing asphalt and maintained lawn does not represent a significant conversion of land use type at the project site, and would be partially offset by the conversion of 0.17 acres of asphalt parking to maintained lawn within the center of the proposed bus drive/staging area. However, the placement of 1.41 acres of fill primarily on open, park-like, deciduous forest to an asphalt parking area represents the largest conversion of land use type associated with the Proposed Action.

The 1.41-acre deciduous forest currently serves as a partial visual buffer and open green space area between the Lee Housing Quarters and the WPSC. Some forest clearing has occurred in the recent past in the proposed parking lot site, resulting in a fairly open, park-like appearance to the wooded area. The current land use functions of this area are highly compatible with the residential land use, providing a natural landscape, aesthetic value, visual screening, and minor noise and light screening. The conversion of the forest to an asphalt parking lot represents a potentially significant intrusion to the relatively natural landscape currently afforded to adjacent

residents of the Lee Housing Quarters. Accordingly, UMSA proposes to implement design refinements to minimize potential impacts on adjacent residents of the Lee Housing Quarters.

Specifically, USMA will retain all waterbody bed, bank, and riparian vegetation and shade trees associated with Crow's Nest Brook and Sinclair Pond Brook. USMA also has incorporated four islands within the central portion of the parking lot to retain existing vegetation and several larger shade trees. All disturbed soils and fill also would be permanently revegetated. USMA also would plant vegetation landscaping around the southwest perimeter of the parking lot. This landscaping would consist of a combination of deciduous and evergreen plantings to create a visual buffer between Lee Housing Quarters and the parking lot during all four seasons of the year. Implementation of these measures would minimize reduction of the natural landscape and vegetation buffer, and provide some noise and light buffering, between Lee Housing Quarters and the proposed parking lot to the extent practicable.

Additionally, to minimize potential noise intrusion on the adjacent residential area, use of the lot would be limited to personally owned vehicle parking during normal school hours and off-hour, school-related events. Bus or fleet car storage or vehicle maintenance activities would not be permitted. USMA also would use shoe-box type light fixtures, which direct light downward onto the parking lot surface rather than in all directions, and would minimize potential local light pollution.

The demolition of Building 1000 and conversion to parking lot and maintained lawn would not be considered a significant conversion of land use. Building 1000 is considered a contributing element to the NHLD, and is individually eligible for the NRHP, although it is not currently considered a defining or integral element of the NHLD. Additionally, the USMA has determined that Building 1000 is no longer needed for housing or business administrative purposes, and therefore is eligible for demolition. No significant cultural resource impacts associated with the NHLD are anticipated as a result of demolition of Building 1000, pending completion of an MOA between the USMA and NYSHPO and a Historic American Buildings Survey (see Appendix D for the draft MOA).

Moreover, the proposed land use in the project area would consist of structures and transportation areas designated for student education and recreational opportunities, and therefore would be consistent with the land use designation of the WPSC. Additionally, implementation of the elements of the Proposed Action would have a major beneficial impact on land use by improving current educational facilities and use by WPSC's faculty and students, as well as improving the teacher to student ratio, expanding classroom space, and providing adequate parking at the WPSC and in accordance with DODEA Standards.

4.9.2 Recent, Ongoing, and Planned Developments

The Community Support Zone is the primary housing and support center for staff, faculty, non-West Point military personnel, and military retirees. The proposed WPSC Upgrade would be consistent with the *USMA Master Plan for the Year 2007* (USMA 1998b), because it would provide additional support services for USMA military members residing on post.

4.9.3 Generation and Disposal of Waste Material

Construction of the Proposed Action would temporarily generate various typical solid construction and demolition debris. The amount of debris generated would be minor compared to the total amount of solid waste generated per year at USMA at West Point. This debris would be temporarily disposed of at an on-site industrial receptacle, and periodically collected and disposed of off-site at an approved waste disposal site. Construction would therefore have a minor, temporary impact on the generation and disposal of waste material.

Routine use of the elements of the WPSC Upgrade would generate a minor increase in the amount of ordinary, non-hazardous solid waste compared to current land uses in the immediate project area. The generation of this waste would be managed by the placement, maintenance, and periodic collection of adequate trash receptacles at the new WPSC facilities. Collected solid waste would be either recycled or disposed of at the USMA Transfer Station located adjacent to Range 4, off of Route 293, prior to being transported off-site to an approved waste disposal site in accordance with USMA refuse management plans.

Routine use of the proposed elements of the WPSC Upgrade also would not significantly contribute to the amount of wastewater and sewage already being produced by current land uses

in the immediate area. Students attending the WPES and WPMS live on the USMA, therefore no additional waste would be generated. Generated wastewater and sewage would be properly treated at the Target Hill Wastewater Treatment Plant and ultimately discharged into the Hudson River in accordance with the USMA's SPDES permit.

The 1.41-acre impervious surface created by the new parking lot would increase local stormwater sheet flow, and has the potential to result in a significant impact on water quality of the adjacent waterbodies, Crow's Nest Brook and Sinclair Pond Brook. Accordingly, USMA has incorporated best management practices and design elements into the parking lot design. These measures include a site-specific Erosion Control Plan, compliance with NYSDEC SPDES requirements, an earthen berm and revegetation to slow and filter stormwater sheet flow to adjacent waterbodies, retaining all riparian vegetation along adjacent waterbodies where practical, and retaining several patches of shade trees and vegetation in the central portion of the parking lot to minimize the area of impervious surface. As part of the Erosion Control Plan, USMA will develop and implement a stormwater management plan for the additional stormwater runoff generated by the proposed parking lot both during construction activities and during parking lot operation. The USMA will require all contractors to incorporate this stormwater management plan into their construction techniques. In addition, the USMA will perform long-term monitoring of stormwater runoff from the new parking lot, and will evaluate the adjacent streams for water quality and erosion and sedimentation for a three-year period following completion of construction. In the event that the monitoring reveals that the stormwater is having an undue adverse effect on the adjacent streams or the stability of the slopes leading to the streams, USMA will develop and implement appropriate corrective actions to resolve the issue. As a result, implementation of the Proposed Action and proposed best management practices and design elements would adequately avoid, minimize, or mitigate potential significant impacts on water resources.

4.9.4 Recreational and Other Designated Facilities

Implementation of the Proposed Action would provide improved educational and support facilities for the students enrolled in WPES and WPMS. This land use would be consistent with

existing educational and recreational land uses at the WPSC, and with the educational and physical development missions of the USMA at West Point.

4.10 VISUAL RESOURCES

As currently designed, the different elements of the Proposed Action would have varying impacts on the visual landscape context associated with the USMA. The proposed WPES addition, when seen in context with the previous addition on the southwest side, will form a bookend to the original building. The existing building and the previous addition have established a context for massing, style, color, and scale, and the proposed design has incorporated these various design elements to the maximum extent possible. In particular, the exterior for the new addition was designed to respond to the architecture of the existing building and its original addition. The roofline, façade or elevation elements, and building materials all have been selected to match the existing building and addition, to provide a new addition that worked together with the elementary school and its addition to form one complete building that maintains the existing relationship of the WPSC with the other buildings in the NHLD (United States Army Corps of Engineers [USACE] 2002a:1).

The landscaping adjacent to the addition to the WPES will be designed to compliment the architecture, enhance the pedestrian spaces, and provide a strong sense of community. Plantings around the proposed classroom addition would blend with plantings around the existing WPES. Trees would be planted along the proposed bus drop off in front of the WPES to provide shade. Low-level plantings would be provided to add color and scale to the plaza area and adjacent to the new access stairs that lead to the entrance to the new addition (USACE 2002b:4). In addition to these architectural and landscape considerations, the USMA will also implement design changes that are consistent with recommendations made by the NYSOPRHP SHPO during their review and approval of the proposed project.

Following construction and final landscaping of the addition to the WPES, the WPES will present a more complete visual appearance from other areas of the WPSC, including the approach to the WPSC along Barry Road. Furthermore, the addition is on the northern side of the existing WPES, and will be hidden or partially screened by the existing WPES. Thus the

addition to the WPES will not visually detract from the existing viewshed from structures located along Bailey Loop or Washington Road, and will remain fully screened from the viewsheds of structures associated with the Lee Housing Quarters by the WPMS. Additionally, the two temporary modular classrooms currently located southeast of Building 705A would be removed following construction of the proposed addition, which would improve the visual landscape of the WPSC.

The proposed parking lot on the eastern side of Barry Road, within the WPSC, will require the demolition of Building 1000, the existing parking lot, and a small paved area at the north side of the WPES, as well as the clearing of 1.41 acres of the existing park-like wooded area between the WPSC and the Lee Housing Quarters to the east (USACE 2002b:2). In particular, the clearing of the wooded area will require the removal of a large number of small and medium size trees and other vegetation, and removal of numerous boulders from the area (USACE 2002b:2).

To partially mitigate for the clearing associated with the proposed parking lot, existing trees and screening vegetation in the proposed parking lot area will be retained in place to the greatest extent possible (USACE 2002b:4). Furthermore, boulders currently on the site will be relocated to fit into the new design of the WPSC, and landscape islands will be included to provide a visual break within the paved area of the parking lot (USACE 2002b:4). The USMA will implement significant screening of the parking lot from Washington Road (USACE 2002b:6) to reduce the visual impacts to the existing viewshed from this corridor. The landscape islands that will be installed to help mask the large, open paved areas of the proposed parking lot will contribute to screening the paved area from Washington Road (USACE 2002b:4), and will also supplement the buffer of wooded area that will remain between the WPSC and the Lee Housing Quarters along Crow's Nest Brook and Sinclair Pond Brook. The designs for vegetative screening of the new parking lot will include new plantings using materials that will blend with the existing natural landscape, and provide a buffer from adjacent residential areas associated with the Lee Housing Quarters (USACE 2002b:4).

It is expected that parking lot illumination will have a visual impact on surrounding viewsheds during evening hours, although this impact will be most obvious during the winter, when evening

hours are longest and deciduous vegetative screening surrounding the parking lot is at a minimum. The incorporation of evergreen species into the new planting designs will help to partially mitigate for the impacts of site illumination during the winter, as well as the use of a programmable timer for the lights that could be adjusted throughout the year.

In spite of the clearing that will be necessary for the parking lot, and the construction of the addition to the northern end of the WPES, the project is expected to have no impact on the USMA at West Point's location within the West Point Military Academy Subunit of the HHSASS. Pursuant to 15 CFR Part 930.34(b), the NYSDOS conducted a site visit on March 28, 2002, at least 90 days before final project approval (Bjornsen 2002). Due to the remote location of the project at the USMA at West Point and limited visibility from the Hudson River, the NYSDOS determined that the Proposed Action would have no impact on the HHSASS (Bjornsen 2002).

4.11 CULTURAL RESOURCES

The USMA recognizes that the proposed WPSC Upgrade will have a number of potential effects on cultural resources in or eligible for inclusion in the National Register of Historic Places (NRHP). A number of recommendations were made to address these potential effects, including additional historical research, visual assessments, and architectural and archaeological surveys for the proposed WPSC Upgrade (Nolte et al. 2001). The USMA fully evaluated these recommendations in consultation with the SHPO and the Advisory Council on Historic Preservation, and developed a Draft Memorandum of Agreement (MOA) (Appendix D) that addresses the potential impacts of the WPSC Upgrade on cultural resources to the Advisory Council on Historic Preservation.

The USMA developed and submitted a Draft MOA (Appendix D) that addresses the potential impacts of each of the proposed elements of the WPSC Upgrade on cultural resources to the Advisory Council on Historic Preservation on November 14, 2002 (Halin 2002b), and to the SHPO on October 9, 2002 (Halin 2002a). As part of the Draft MOA, the USMA would agree to implement the following measures to mitigate for the adverse effects of the proposed WPSC Upgrade on cultural resources:

1. Design the classroom additions to Building 705A to reflect the design of the existing WPES;
2. Perform a Phase I Cultural Resources Survey of the proposed parking lot area;
3. Design the proposed parking lot to minimize visual intrusions to adjacent housing areas and the Washington Road corridor, including maintaining a vegetation screen between the parking lot and adjacent areas; and,
4. Perform Historic Documentation for Building 1000, a contributing element to the NHLD, according to standards identified as appropriate by the USDI National Park Service (USMA undated).

The Advisory Council on Historic Preservation indicated that the Draft MOA is adequate to resolve the adverse effects of the proposed WPSC Upgrade, and requested that the final MOA and related documentation be filed at the end of the consultation process (Wallace 2002). The SHPO completed its review of the Draft MOA on November 13, 2002 (Donofrio 2002). The USMA will finalize the draft MOA as soon as practicable.

4.12 SOCIOECONOMICS

4.12.1 Population

Implementation of the proposed WPSC Upgrade would require the employment of two to four new permanent teachers, and may result in a minor increase in the permanent population of the area.

4.12.2 Economy and Employment

Operation of the proposed WPES addition would have a minor beneficial impact on the local economy and employment as a result of the employment of two to four permanent teachers (Naqvi 2002). The proposed construction cost for the WPSC Upgrade is $3,663,000.00 (Baker & Associates 2001), which would have a minor beneficial impact on employment and average wage in Orange County and surrounding areas as a result of temporary employment of local and/or out-of-state construction contractors.

4.12.3 Community Services

The construction of the Proposed Action would have a minor, direct impact on existing community services at the USMA at West Point. The use of the proposed facilities by the community other than WPES and WPMS students is unlikely or would be limited. However, implementation of the Proposed Action would improve the quality of educational services provided to children of West Point military personnel residing on post. Benefits would include more interaction between teachers and students, modern facilities that accommodate the WPSC's current needs, and designated space for various programs.

4.12.4 Tax Revenues

The construction and operation of the proposed elements of the WPSC Upgrade would not result in any change in federal, state, or local tax-exempt status of the USMA at West Point. Temporary construction activities may generate a minor temporary increase in state sales tax revenues as a result of sales of goods and services to construction personnel in the Village of Highland Falls and adjacent municipalities.

4.12.5 Transportation and Traffic Circulation

Approximately 500 dump truck trips and other routine construction vehicle traffic would be associated with the proposed project construction. This traffic would cause a temporary increase in the flow and volume of traffic on Washington Road and the Barry Road entrance during the period of construction. USMA would minimize the effect of increased local traffic congestion by clearly signing construction work areas and using flagpeople as necessary to slow and direct traffic. Operation of the bus drive/staging area, 152-space parking lot, and new and modified sidewalk crossings on the east side of Barry Road would improve traffic circulation, reduce congestion, and improve safety for vehicles and pedestrians at the WPSC. Therefore, implementation of the Proposed Action would have a minor, beneficial, long-term impact by improving local public school transportation and local traffic conditions.

4.13 AIR QUALITY

The Clean Air Act Amendments of 1990, 40 CFR 93.158, require that emissions associated with Federal Actions do not interfere with State Implementation Plans (SIPs) for achieving National Ambient Air Quality Standards of criteria pollutants that currently are in non-attainment.

Because the Proposed Action would be implemented in the Hudson Valley Air Quality Control Region, which is classified as a severe non-attainment area for ozone, the USMA must evaluate direct and indirect emissions associated with the Proposed Action and ensure these emissions conform with the SIP.

Direct emissions are defined as those that are directly associated with the Federal Action, and would include long-term emissions generated by any new stationary emission source (i.e., power plant), and temporary emissions generated by construction equipment and vehicles required to construct the action. Indirect emissions are defined as those emissions that occur in support of the Federal Action, and would include any new or increased emissions generated by existing stationary emission sources serving the action.

USMA identified and evaluated direct and indirect emissions of volatile organic compounds (VOCs) and nitrogen oxides (NO_x), which combine in the atmosphere to produce ozone, in accordance with SIP emission thresholds. In addition, USMA assessed the particulate matter (PM-10) emissions associated with the Proposed Action. SIP emission thresholds for severe ozone non-attainment areas would be exceeded if implementation of the Proposed Action would result in the generation of greater than 25 tons per year (tpy) of VOCs and 25 tpy of NO_x; and for moderate PM-10 non-attainment areas, generation of greater than 100 tpy of PM-10. USMA determined that additional direct emissions associated with the Proposed Action would be limited to those temporarily generated by construction equipment (i.e., backhoes, bulldozers, dump trucks), particulate matter generated by excavation and rock blasting, and emissions due to asphalt paving and curing. Considering these factors, USMA determined that an estimated total of 20.9 tpy of VOCs, 4.3 tpy of NO_x, and 0.27 tpy of PM-10 would be generated during the construction phase.

The WPSC is programmatically under the control of the DODEA, and technically, is not under common control of the USMA in relation to air emissions from other parts of the post (Alongi 2001). Therefore, the USMA did not include in their calculations the indirect, potential incremental increase in emissions generated by the gas/oil-fired steam plant that serves the WPSC, as required to heat/cool the new WPES addition.

Therefore, based on the USMA's air conformity assessment, implementation of the Proposed Action would not exceed the established SIP emission thresholds for ozone (VOC and NO_x) or PM-10. Accordingly, USMA's conformity with SIP emission standards is documented in a Clean Air Act General Conformity Statement, provided as Appendix E. As a result, implementation of the Proposed Action would have no significant adverse impact on air quality.

4.14 NOISE

The Proposed Action would not involve the construction and operation of permanent noise-generating facilities. However, as a result of construction related activities, there would be a temporary increase in localized noise generated during the construction of the proposed facilities. There would be a significant short-term elevation in the noise level associated with dump trucks transporting fill and grading of the proposed parking lot adjacent to the Lee Housing Quarters.

External or exterior construction noise would be mitigated by performing construction activities only during daylight hours, during weekdays, and conducting the majority of heavy construction activities during periods when school is not in session (i.e., mid-June to mid-August). Additionally, equipment operation noise would be minimized by requiring the construction contractors to use equipment that meets specific standards. Therefore, operation of the proposed WPSC Upgrade would not significantly increase existing noise levels, and construction related noise would be mitigated to an acceptable level.

4.15 UTILITY INFRASTRUCTURE

The WPSC Upgrade would require a design load ranging from 153 kVA (normal demand) to 173 kVA, which represents a minor increase to the total electrical demand at USMA at West Point. Heat would be provided by the existing gas/oil fired steam plant that serves the WPSC.

4.16 HAZARDOUS MATERIALS

Construction of the Proposed Action would require excavation of fill soils for the WPES addition foundation, parking lot, and minor extensions of utilities. No known hazardous material spills or contaminated sediments or water resources occur in the areas of proposed excavation. As a result, excavation activities associated with implementation of the Proposed Action would not

result in an increased risk to human health or the environment from exposure to hazardous materials.

Construction also would involve the transport, temporary storage, and use of typical hazardous construction materials, such as solvents, lubricants, sealants, adhesives, petroleum products, and paints. Implementation of construction activities, including the transport, use, and temporary storage of potentially hazardous materials, would comply with proper handling and reporting procedures identified in the *USMA Installation Spill Contingency Plan* (USMA 1996).

4.17 PUBLIC HEALTH AND SAFETY

Implementation of the WPSC Upgrades would not increase the frequency or severity of natural hazards or typical student physical injuries or accidents. The WPSC would maintain and expand to the new facilities all required internal safety and security measures in compliance with DODEA Standards, including public health, emergency response, and security services.

4.18 ENVIRONMENTAL JUSTICE

In accordance with Executive Order 12898 (dated February 11, 1994), Federal agencies are required to identify and address the potential for disproportionately high and adverse environmental and human health effects on minority and low-income populations, resulting from the agencies' programs, policies, and activities. Based on the information presented in Section 4.0, Impacts on Environmental Resources, of this EA, no significant or unacceptable adverse environmental or human health effects are expected to result from implementation of the Proposed Action.

Low-income housing, Weyant Green, is located approximately 3 miles south of the proposed project area in the Village of Highland Falls. It is anticipated that implementation of the Proposed Action would not negatively affect the Weyant Green community as a result of increased traffic, noise, air pollution, or potential changes to visual quality because of its remote location relative to the project area. Because implementation of the Proposed Action would not negatively impact this community, no disproportionately high and adverse impact to minority or low-income populations would occur.

4.19 COASTAL ZONE MANAGEMENT

The Proposed Action is located within a state-designated coastal zone management area. The Proposed Action also is located within the West Point Military Academy Subunit of the HHSASS. The proposed construction must comply with NYSDOS CMP State Coastal Policies (Ketcham 1999).

Policy 23 requires the USMA to "protect, enhance and restore structures, districts, areas or sites that are of significance in the history, architecture, archaeology or culture of the state, its communities or the nation." In addition, the Proposed Action will occur within a NHLD. Accordingly, the USMA is coordinating project design details with the NYSOPRHP SHPO, and plans to incorporate the NYSOPRHP SHPO's comments into the final design through the MOA process.

Pursuant to 15 CFR Part 930.34(b), the USMA must notify the NYSDOS CMP of project conformance with State Coastal Policies at least 90 days prior to project implementation. Accordingly, the USMA coordinated with the NYSDOS CMP during a site visit of the Proposed Action conducted on March 28, 2002. Due to the remote location of the project at the USMA at West Point and limited visibility from the Hudson River, the NYSDOS determined that the Proposed Action would have no impact on State Coastal Policies or the HHSASS and that a letter of concurrence would not be required (Bjornsen 2002). Accordingly, the Proposed Action would be consistent with state coastal zone management policies, would have no impact on the HHSASS, and would have no undue adverse impact on New York State coastal zone resources.

5.0 REASONABLY FORSEEABLE FUTURE ACTIONS

The USMA currently plans to implement 15 reasonably foreseeable future actions (RFFAs) located in the vicinity of the WPSC, three of which are related to the WPSC (see Section 5.1) and 12 of which are unrelated to the WPSC (Figure 8) but located within the USMA at West Point (Table 2). Each of these additional actions would be implemented within the 5-year period between January 2, 2001 and January 2, 2006.

5.1 RELATED REASONABLY FORSEEABLE FUTURE ACTIONS

5.1.1 WPES Roof Replacement

A Record of Environmental Consideration (REC) was filed for the replacement of the WPES roof in October of 1999. A sloped standing seam roof would be built, with covered outdoor porches at each entry. Lighting protection for the existing building would also be installed as part of this action.

5.1.2 New WPSC Gymnasium

A new, two-story, 13,000-sf multipurpose gymnasium would be built in the north-central portion of the WPSC. The proposed gymnasium would be constructed to replace the current gymnasium housed within the WPMS. The proposed gymnasium would also house physical and occupational therapy facilities, currently housed in the auditorium of the WPES. A NEPA EA was filed for this project on May 18, 2000.

5.1.3 Future WPSC Upgrades

Future upgrades at the WPSC include construction of a classroom and administration addition to Building 705, construction of a media center, construction of a kitchen and multipurpose room, construction of a central supply area, construction of an administrative addition to Building 705A, construction of a pedestrian bridge from Building 705 to the media center, construction of an emergency vehicular access road from the Lee Housing Quarters to the central school campus, and addition of two wall-mounted air conditioning units in the computer rooms of each school. Additionally, Barry Road would need to be widened to easily accommodate efficient two-way traffic for bus, delivery, and service vehicles. The addition of a turning lane on the southbound side of Barry Road at the intersection with Washington Road would provide

Table 2. Summary List of Related and Unrelated Reasonably Forseeable Future Actions.

Reasonably Foreseeable Future Action	Related to WPSC	Unrelated to WPSC	Action Type	
			Ongoing	Future
WPES Roof Replacement	X			X
New WPSC Gymnasium	X		X	
Future WPSC Upgrades	X			X
Community Activity Center		X		X
Natural Gas Distribution Line		X	X	
KACH Parking Lot		X		X
Demolition of Building 801		X		X
Old Brick Family Housing Area Revitalization		X		X
New Brick Family Housing Area Revitalization		X	X	
Merritt Road Reconstruction		X		X
Washington Road Fire House Expansion		X		X
West Point Cemetery		X		X
Old Youth Center		X		X
Historic Quarters		X		X
Masonry Wall Repair		X	X	

Source: Compiled by Northern Ecological Associates, Inc. 2002.

dedicated left- and right-turn lanes. The existing sidewalk would be relocated to the west side of Barry Road.

5.2 UNRELATED REASONABLY FORESEEABLE FUTURE ACTIONS

The location of 11 of the unrelated RFFAs, excluding the Masonry Wall Repair, are depicted on Figure 8, and all 12 unrelated RFFAs are described in this section.

5.2.1 Community Activity Center

The USMA provides a range of community, family, and fitness support services to its almost 28,000 military, civilian, and retired members. Currently, these activities are located throughout the USMA, and many of the activities are located in substandard or obsolete facilities. The

Figure 8. Site Location Map for Unrelated Reasonably Foreseeable Future Actions at the USMA, West Point, New York.

USMA intends to construct a new, consolidated community activity center and community fitness center to fulfill the needs of the USMA community (Cubbison 2002a).

5.2.2 Natural Gas Distribution Line

A new natural gas distribution line would be constructed by Central Hudson Gas and Electric Corporation to satisfy the USMA energy requirements by providing necessary pressures and volumes of natural gas to the existing system. Where practical, the proposed action consists of a line adjacent to the existing natural gas pipeline that currently feeds the USMA, utilizing existing rights-of-way for pipelines and similar utilities, or along existing rights-of-way for transportation routes such as highways. A NEPA EA for *The West Point 10-Inch Steel Distribution Line* was filed March 27, 2002 (Cubbison 2002b).

5.2.3 KACH Parking Lot

The USMA is considering expanding the KACH parking lot, northwest of the WPSC.

5.2.4 Demolition of Building 801

Building 801 (The Old Post Exchange Warehouse) is scheduled for demolition. Buildings 709 and 759 were previously demolished.

5.2.5 Old Brick Family Housing Area Revitalization

Revitalization of the Old Brick Housing quarters would include exterior and interior repairs or replacement of individual features. Specifically, exterior rehabilitation may include new roofing and flashings, removal of asbestos-containing roof materials, installation of roof anchors and snow guards, removal of television antennas and other roof appurtenances, inspection and cleaning of exterior brick on chimneys, and repair or replacement of chimney caps as required.

All exterior stairs, including the cheekwalls and railings, all sidewalks surrounding the quarters, and exterior concrete window and door sills would be repaired or replaced. Additionally, interior rehabilitation may include insulating the first floor framing, replacement or repair of existing basement windows, repair of firewalls in the attic between the quarters, and replacement of the existing faucets. Landscaping would be provided around the front and sides of the quarters depending on the existing plantings.

5.2.6 New Brick Family Housing Area Revitalization

The first phase of the Revitalization of New Brick Housing Area began on September 3, 2001, and the third, and last, phase is scheduled for completion by January 2, 2006. The Revitalization of New Brick Housing Area includes interior and exterior rehabilitation of 156 quarters, demolition of seven quarters for creation of seven handicapped-accessible quarters, construction of 50 carports, resurfacing of roadways, rehabilitation of the existing electrical system, and rehabilitation of eight historic Non-Commissioned Officers quarters. A NEPA EA was filed for this project on September 11, 2001.

5.2.7 Merritt Road Reconstruction

An approximately one-mile portion of Merritt Road would be reconstructed from Mills Road to East Moore Loop. The roadway work may include full depth pavement replacement, complete replacement of the 5-foot-wide sidewalk, complete replacement of existing curbs and gutters, and repointing and providing new concrete coping of some of the retaining joints. Some of the storm drains crossing or running along Merritt Road would be increased in size, all catch basins would be increased in size, and underdrains and lateral ditches would be provided where required. The existing water distribution system along Merritt Road would be completely replaced, including the water service lines to all existing buildings, the pipe from the water tank on Delafield Road to the Pump House, the piping system to and from the Pump House, and all fire hydrants; fire hydrant control valves would be provided. The supply and distribution lines would be ductile iron pipes and the water service lines would be galvanized steel pipes. All gas valves and associated boxes would be replaced and four sanitary manholes would be rehabilitated.

5.2.8 Washington Road Fire House Expansion

Building 721, the Washington Road Firehouse, was constructed in 1939 to serve as West Point's main fire station. The building has been upgraded on a number of subsequent occasions, and continues as West Point's main fire station. Building 721 would have a second floor addition constructed. This second floor addition would provide upgraded and additional overnight accommodations for on-duty firefighters, and additional office space for on-duty firefighters.

5.2.9 West Point Cemetery

The USMA plans to rehabilitate the West Point Cemetery gates as part of its ongoing routine and recurring maintenance activities. The cast iron gates were constructed in the late 19th century. This project involves sand blasting, repair of architectural elements as necessary, replacement of missing or badly deteriorated architectural elements, and painting of the gates. All rehabilitation work on the gates would follow *The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (USDI 1990).

5.2.10 Old Youth Center

The USMA, Directorate of Housing and Public Works, intends to perform interior and exterior rehabilitation of Building 693 (Old Youth Center). Building 693 was constructed as a school for enlisted mens' children in 1875. The building is considered a contributing element to the NHLD. The majority of rehabilitation would be intended to repair damage to the building occurring from a fire several years ago. The rehabilitation work would be performed in accordance with a Scope of Work dated June 1, 2001, and would follow *The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (USDI 1990).

5.2.11 Historic Quarters

The USMA, Directorate of Housing and Public Works, intends to perform exterior rehabilitation of seven family housing quarters in four historic buildings, Quarters 112, 113, 126 and 127. Quarters 112 and 113 were constructed in 1892 as Officers' Quarters. Quarters 126 was constructed as the post hospital in 1891, and Quarters 127 was constructed as nurses' quarters in 1914. Exterior rehabilitation would be performed in accordance with a Scope of Work dated June 21, 2001, and would follow *The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (USDI 1990).

5.2.12 Masonry Wall Repair

Routine maintenance and repair, including repointing and reconstruction of deteriorated walls, and replacing concrete at the top of the walls with limestone caps, of the historic retaining walls along the Washington Road corridor was initiated in the summer of 2002 (Cubbison 2002a).

6.0 CUMULATIVE IMPACTS

Cumulative environmental effects are the result of a Proposed Action being added to effects of other past, present, and RFFAs, regardless of the agency or person responsible for such actions. Site conditions at the WPSC immediately after the completion of major improvements in the mid-1980s serve as a baseline for cumulative effects analysis. In the mid 1980s, major renovations were completed to accommodate student enrollment at the WPMS. Current environmental conditions at and in the immediate vicinity of the WPSC are very similar to conditions present immediately following these renovations.

Cumulative effects associated with these past (Section 3.9.2), and present and RFFAs (Section 5.0) in the vicinity of the WPSC are summarized in this section by resource area, including geology/soils, water resources, biological resources, land use, visual resources, cultural resources, socioeconomics, air quality, noise, utility infrastructure, hazardous materials, public health and safety, and environmental justice. This section addresses the summarized cumulative effects, whereas "no effect" issues are not addressed.

6.1 GEOLOGY/SOILS

The implementation of past, present, and reasonably foreseeable future development in the region of influence likely would have minor short-term indirect and long-term direct impacts on soils. Earth moving associated with construction and demolition activities may result in temporary, indirect soil erosion and sedimentation. However, the use of erosion control measures and best management practices specified in project-specific Erosion Control Plans during earth moving activities would reduce potential temporary erosion and sedimentation effects to a level that is not undue or significant. The 1.41-acre permanent fill associated with the proposed action, combined with other site-development fill activities, represents a long-term, direct, impact on soils. However, the total acreage affected by permanent fill is minor relative to the size of the USMA at West Point property.

6.2 WATER RESOURCES

The implementation of past, present, and reasonably foreseeable future development in the project area likely would have no direct or indirect significant impacts on groundwater resources.

Cumulatively, these actions would result in a potential temporary, minor, adverse impact on surface waters due to potential soil erosion during construction activities, primarily associated with the Proposed Action, future WPSC upgrades, and the natural gas distribution pipeline. However, the use of site-specific erosion control measures and best management practices specified in project-specific Erosion Control Plans during earth moving activities, as well as hazardous and toxic material spill control and remediation, would reduce potential temporary erosion and sedimentation effects to a level that is not undue or significant. Reconstruction of water main pipelines associated with Merritt Road reconstruction, and improvement of stormwater drainage and management associated with Merritt Road reconstruction and New Brick Family Housing Area rehabilitation, would result in a cumulative, long-term, beneficial impact on stormwater management, surface water quality, and public water supplies at the USMA at West Point.

6.3 BIOLOGICAL RESOURCES

The implementation of past, present, and reasonably foreseeable future development in the region of influence would increase the potential for short-term and long-term adverse impacts on biological resources, including the long-term direct loss or conversion of common vegetation types, and subsequent short-term direct loss or indirect displacement of wildlife. Because existing biological resources in the region of influence are common in Orange County and upstate New York, cumulatively these impacts would be considered minor. Any potential significant impacts on rare, threatened, or endangered (RTE) species or vegetation communities would be avoided, minimized, or mitigated to a level that is not significant in accordance with the Endangered Species Act of 1973 (as amended) and New York State RTE species protection laws. In addition, any impacts to jurisdictional wetlands also would be avoided, minimized, or mitigated to a level that is not significant in accordance with Section 404 of the Clean Water Act, Article 15 (Protection of Waters) of the NYSECL, Article 24 (Freshwater Wetlands) of the NYSECL, and NYSDEC 401 Water Quality Certification.

6.4 LAND USE

Generally, existing land uses at the USMA at West Point are consistent with uses identified in the *Master Plan for the year 2007* (USMA 1998b), and any proposed development or redevelopment would be required to be consistent with land uses allowed in accordance with

USMA *Master Plan for the Year 2007* (USMA 1998b). Therefore, adequate controls are in place to ensure any future developments are consistent with USMA regulations.

However, the implementation of past, present, and reasonably foreseeable future development in the project area likely would have long-term, direct impacts on land use, both adverse and beneficial. Beneficial impacts would occur as a result of reconstruction of Merritt Road to improve public health and safety. Adverse impacts would occur as a result of construction and operation of the Proposed Action parking lot, future WPSC upgrades, natural gas distribution line, and the new KACH parking lot. These activities would result in the conversion of natural landscapes and habitats to paved surfaces, buildings, or permanent rights-of-way. As a result, implementation of past, present, and reasonably foreseeable future development would cumulatively result in long-term, minor, adverse impacts on land use at the USMA at West Point.

6.5 VISUAL RESOURCES

The implementation of past, present, and reasonably foreseeable future development in the region of influence likely would result in long-term direct impacts on visual resources, both adverse and beneficial. Implementation of the Proposed Action, future WPSC upgrades, natural gas distribution pipeline, and KACH parking lot would each result in long-term, minor, adverse impacts on visual resources by converting natural landscapes to paved surfaces, buildings, and permanent rights-of-way. However, existing visual landscapes would be enhanced in the long-term by the implementation of the WPES roof replacement, demolition of Building 801, and rehabilitation of the West Point Cemetery gates, Old Youth Center, historic Quarters 112, 113, 126, and 127, and masonry wall repair on Washington Road. From a cumulative perspective, implementation of past, present, and RFFAs would result in a long-term, minor, beneficial impact on visual landscapes.

6.6 CULTURAL RESOURCES

Generally, any development would be required to comply with the NHPA for the protection of properties listed or eligible for listing on the NRHP, as well as SHPO regulations. As a result, no undue adverse cumulative impacts on cultural resources are anticipated.

The implementation of past, present, and reasonably foreseeable future development in the region of influence likely would have a long-term, direct, beneficial impact on cultural resources. Specifically, the rehabilitation of the West Point Cemetery gates, Old Youth Center, historic Quarters 112, 113, 126, and 127, and masonry wall repair on Washington Road would each result in a minor, beneficial impact by rehabilitating and preserving these cultural resources. From a cumulative perspective, implementation of past, present, and RFFAs would result in a long-term, minor, beneficial impact on cultural resources.

6.7 SOCIOECONOMICS

6.7.1 Population and Employment

Employment of construction contractors needed to complete all past, present, and reasonably foreseeable future development would result in a minor temporary beneficial impact to socioeconomic resources within Orange County. Once these actions are complete, the employment of contractors would not be necessary and the temporary employment benefit would cease.

The implementation of past, present, and reasonably foreseeable future development in the project area likely would have a positive impact on the population of the USMA. The increased space created by the Proposed Action would better accommodate the current student enrollment at the WPES and WPMS.

6.7.2 Community Services

The implementation of past, present, and reasonably foreseeable future development in the region of influence likely would have a minor long-term positive impact on community services of the USMA. All actions would improve infrastructure and facilities at the USMA at West Point, thus improving the quality of education, recreation, and community services at the USMA at West Point.

6.7.3 Tax Revenues

The implementation of past, present, and reasonably foreseeable future development in the project area likely would have no direct or indirect impact on tax revenues at the USMA at West

Point. Because the USMA is federally-owned, no federal, state, or local property tax revenue is generated by this installation. However, the employment of contractors to construct the Proposed Action may result in minor, temporary increased state sales tax revenue on goods and services purchased in the Town of Highland Falls and adjacent municipalities.

6.8 TRANSPORTATION AND TRAFFIC CIRCULATION

The implementation of past, present, and reasonably foreseeable future development in the project area likely would have a temporary, minor, direct, adverse impact on transportation and traffic circulation at the USMA at West Point. Traffic would temporarily increase in the project area during the construction phase of each action. This impact would be mitigated to a level that is not undue or significant at the WPSC by scheduling the majority of heavy construction to occur when school is not in session. This impact also would be mitigated to a level that is not undue or significant at the overall USMA at West Point by the implementation of best management practices, such as posting "construction work area" signs, using flagpeople to slow and direct traffic as necessary, and by performing construction activities only during daylight, weekday hours.

6.9 AIR QUALITY

The implementation of past, present, and reasonably foreseeable future development in the project area likely would have temporary adverse direct and indirect impacts on air quality at the USMA at West Point. All actions may result in increased direct emissions of exhaust and fugitive dust from construction machinery and activities. However, temporary construction emissions generally would be minor and confined primarily to individual project sites. Cumulatively, these temporary emissions of NAAQS criteria pollutants likely would not exceed SIP emission thresholds at the USMA at West Point, and would conform with the SIP.

6.10 NOISE

The implementation of past, present, and reasonably foreseeable future development in the project area likely would have temporary, direct and indirect, adverse impacts on noise at the USMA at West Point. These actions would result in temporary increased noise during construction and any required blasting activities. Cumulatively, adverse noise impacts on educational, recreational, and residential activities would be reduced to a level that is not undue

or significant by performing external or exterior construction and blasting activities only during daylight, weekday hours.

6.11 UTILITY INFRASTRUCTURE

The implementation of past, present, and reasonably foreseeable future development in the project area likely would have a permanent, significant, beneficial impact on the utility infrastructure of the USMA. Construction and operation of the natural gas distribution pipeline would improve and expand natural gas service on-post, and represents a significant improvement to utility infrastructure at the USMA at West Point. The replacement and upgrading of existing electrical and water main utilities to the WPSC and the greater USMA at West Point would serve to enhance overall utility infrastructure on-post.

6.12 HAZARDOUS MATERIALS

The implementation of past, present, and reasonably foreseeable future development in the project area may result in a temporary, minor, direct and indirect impact on human health by the storage, use, transport, and disposal of hazardous materials associated with construction activities. Cumulatively, these potential impacts would be reduced to a level that is not undue or significant by handling all such hazardous materials in accordance with the DODEA Health and Safety Plan and *USMA Installation Spill Contingency Plan* (USMA 1996).

6.13 PUBLIC HEALTH AND SAFETY

The implementation of past, present, and reasonably foreseeable future development in the project area likely would result in long-term, direct, beneficial impacts on public health and safety. Minor beneficial effects would include the installation of exterior lighting on the WPES to improve local safety and security, and demolition of Building 801 to avoid associated hazards and provide space for the proposed Community Activity Center. Significant beneficial impacts would occur as a result of construction and operation of new and improved educational, recreational, utility, and roadway facilities at the USMA at West Point, including future WPSC upgrades, rehabilitation of the Old Brick and New Brick Family Housing Areas, reconstruction of Merritt Road, and expansion of the Washington Road Fire House.

Additionally, fire response time could be temporarily impacted by the implementation of the Proposed Action and RFFAs, especially during the reconstruction of Merritt Road. To mitigate this potential concern, the USMA would minimize the duration of the Washington Road Fire House expansion activities. Additionally, the USMA would develop and implement an emergency response plan to ensure adequate emergency services and response times would be available to cover the USMA at all times.

6.14 ENVIRONMENTAL JUSTICE

Implementation of the past, present, and RFFAs would not disproportionately impact minority or low-income populations.

7.0 SUMMARY AND CONCLUSION

7.1 PROPOSED ACTION

The Proposed Action would involve the implementation of the WPSC Upgrade, which includes six separate elements. These elements include construction of a classroom addition to Building 705A, construction of a parking lot with approximately 152 parking spaces, construction of two sidewalk cuts and improvement of one sidewalk cut on the east side of Barry Road, construction of a new bus drive/staging area, demolition of Building 1000, and removal of temporary modular classrooms.

7.2 ALTERNATIVES

The no action alternative would not fulfill DODEA code requirements and therefore was rejected.

7.3 ANTICIPATED ENVIRONMENTAL EFFECTS

No significant cumulative effects would result from implementation of the Proposed Action. The principal direct and indirect environmental issues related to the implementation of the Proposed Action would include:

(1) Construction impacts (*e.g.*, soil erosion, traffic, roadway access, utility access, noise)
(2) Historic properties within the NHLD, particularly the Historic Washington Road Corridor and Building 1000
(3) Visual effects on-post
(4) Stormwater runoff management
(5) Quality of life impacts on adjacent community housing
(6) Transportation

Many of these potential impacts would be mitigated by the use of good management practices and engineering controls. Mitigation measures must be addressed and are included in order to diminish any potential significant adverse effects. Best management practice measures would be implemented to remove, handle, transport, and dispose of potentially hazardous materials.

7.4 MITIGATION MEASURES

Mitigation measures would be employed to address impacts due to implementation of the Proposed Action, including:

(1) Erosion and sediment controls would be used in accordance with U.S. Army Corps of Engineers (USACE) specifications and good construction practices. Excavation of material would be controlled by best management practices, design specifications, and engineering practices.

(2) Temporary project impacts to traffic, roadway access, utility access, and quality of life would be minimized by limiting the majority of heavy external and exterior construction activities to daylight, weekday hours when school is not in session.

(3) The impact of temporary, increased noise levels would be reduced by restricting the majority of heavy external and exterior construction activities to daylight, weekday hours when school is not in session, and noise levels would be minimized by requiring contractors to use equipment that meets specific standards.

(4) Permanent impacts of project construction and operation on historic architecture, the NHLD, and on-post visual or aesthetic resources would be minimized to the maximum extent practicable by using surface features, colors, and materials that are consistent with the historic and visual context of the NHLD in the design of the proposed structures, by utilizing the *Secretary of the Interior Standards for Rehabilitation of Historic Structures*, and adopting related recommendations from the New York State Office of Parks, Recreation and Historic Preservation.

(5) Stormwater runoff at the proposed parking area would be improved by installing a 6- to 12-inch berm at the edge of the parking area to slow runoff into Crow's Nest Brook and Sinclair Pond Brook and by retaining natural vegetation around the periphery of the lot. The parking lot surface will be "crowned" in the center, resulting in a "sheet runoff" pattern throughout the parking lot that will direct stormwater flow generally in three directions, rather than a single channel. In addition, vegetated islands will be incorporated into the parking lot design to reduce the total amount of new impervious surface area by approximately 2,650

square feet (0.06 acre), and also provide additional opportunities for rainwater to permeate and infiltrate. To further prevent undue adverse effects of stormwater on adjacent waterbodies as a result of this project, the architectural/engineering firm that is designing this project will prepare an Erosion Control Plan, which will be formally reviewed and approved by the USMA. The Erosion Control Plan will be implemented by the contractor during construction, and by the USMA during operation of the parking lot.

(6) In addition, USMA will perform long-term monitoring of stormwater runoff from the new parking lot, and will evaluate the adjacent streams for water quality and erosion and sedimentation for a three-year period following completion of construction. In the event that monitoring reveals that the stormwater is having an undue adverse effect on the adjacent streams or the stability of the slopes leading to the streams, USMA will develop and implement appropriate corrective actions to resolve the issue.

(7) To prevent potential undermining of the banks adjacent to the proposed parking lot, the USMA will undertake measures to stabilize the banks of Crow's Nest Brook and Sinclair Pond Brook.

(8) The WPSC would be improved by constructing a parking area to meet current DODEA codes and handicapped-accessible parking requirements.

(9) Vehicle and pedestrian access and safety for WPSC users would be improved by separating the bus drop-off zone from the vehicular parking and installing curb cuts for infant-strollers and handicapped persons.

(10) To minimize local light pollution from the proposed parking lot, USMA would install directional, focused, glare-reducing ("shoe-box" type) light fixtures with adjustable timers in the proposed parking lot, which will direct the light downward onto the parking lot surface at established times during the evening, rather than in all directions, all night long.

7.5 CONCLUSION

Implementation of the mitigation measures previously identified would reduce the potential impacts resulting in no significant adverse impacts to the environment. An Environmental Impact Statement is, therefore, not required.

8.0 LIST OF PREPARERS

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9.0 PUBLIC AND AGENCY PARTICIPATION

A comprehensive listing of agencies and persons consulted for information supporting this EA is provided in Appendix A.

10.0 REFERENCES AND CONTACTS

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Beemer, J.A. 2002b. Personal communication on April 15 between J.A. Beemer, Directorate of Housing and Public Works, Environmental Management Division, United States Military Academy, West Point, New York, and K. Wiley, Northern Ecological Associates, Inc., Canton, New York.

Beemer, J.A. 2002c. Personal communication on November 22 between J.A. Beemer, Directorate of Housing and Public Works, Environmental Management Division, United

States Military Academy, West Point, New York, and S. Compton, Northern Ecological Associates, Inc., Fredonia, New York.

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Cubbison, D. 2002b. Personal communication on December 9 between D. Cubbison, Directorate of Housing and Public Works, United States Military Academy, West Point, New York, and K. Wiley, Northern Ecological Associates, Inc., Fredonia, New York.

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Halin, P. 2002b. Letter communication on November 14, from P. Halin, Cultural Resources Manager, United States Military Academy, West Point, New York, to D. Klima, Director, Office of Federal Agency Programs, Advisory Council on Historic Preservation, Washington, D.C.

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APPENDIX A

LIST OF AGENCIES AND PERSONS CONSULTED

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LIST OF AGENCIES AND PERSONS CONSULTED

Name of Contact Agency	Information Requested	Date Contacted	Date Responded
Alan Bjornsen USMA, Directorate of Housing and Public Works	KACH Helipad EA	4/11/02	4/12/02
Town of Highlands	Demographic Characteristics	4/15/02	4/16/02
Jim Beemer, USMA, Environmental Management Division	2002 Mollusc and Crayfish Survey of the Drainages within the United States Military Academy at West Point, New York	6/20/02	6/27/02
	1995 Timber Rattlesnake Telemetry Study at West Point Military Reservation		
	1996 Timber Rattlesnake Telemetry Study at West Point Military Reservation		
Doug Cubbison USMA, Directorate of Housing and Public Works	Draft Environmental Assessment for the West Point 10-inch Steel Natural Gas Distribution Line	11/4/02	11/5/02
	Storage Shed at West Point School REC		

Source: Compiled by Northern Ecological Associates, Inc. 2002

APPENDIX B

AGENCY CORRESPONDENCE

APPENDIX C

DISTRIBUTION LIST

APPENDIX C

DISTRIBUTION LIST

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APPENDIX D

DRAFT MEMORANDUM OF AGREEMENT REGARDING CULTURAL RESOURCES

APPENDIX E

CLEAN AIR ACT CONFORMITY STATEMENT

APPENDIX F

PUBLIC/AGENCY COMMENT LETTER AND USMA'S RESPONSE